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Neoplasms of Domesticated Animals. (A Mayo Clinic Monograph.) By WILLIAM H. FELDMAN, D.V.M., M.S., Division of Experimental Surgery and Pathology, The Mayo Foundation, Rochester, Minn. With a Foreword by CHARLES H. MAYO, M.D. Octavo of 410 pages, with 193 illustrations. Cloth. $6.00 net.

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STRICTURE OF THE UTERINE CERVIX *

ARTHUR H. CURTIS, M.D.
CHICAGO

In presenting a summarized sketch of my subject, the pathology and clinical features of obstructions and strictures of the uterine cervix, it is my hope that I may suggest some new points for consideration. One encounters cases of cervical stricture repeatedly every month, and I am increasingly impressed that these lesions are of outstanding importance—of such importance that they merit the attention not only of the gynecologist but of the internist and the general practitioner as well.

ETIOLOGY

Cervical strictures in younger women occur most frequently in those who give a history of genital infection or instrumentation. Gonorrheal infection, particularly in those cases in which there has been considerable treatment of the cervix, is perhaps the most common of all causes of stricture. The use of radium within the uterus rivals gonorrheal infection. The cautery knife, so popular in modern times in the treatment of endocervicitis, may be useful in overcoming strictures, but it is also a potent factor in producing them. This is particularly true if repeated cauterizations are performed or if the cautery knife carries too much heat; also, if it has been necessary to cauterize high within the canal. Even the curet brings its toll of adhesions and cicatrices in the cervical canal; surely no one would curet the urethra without fear of a stricture, yet it is assumed that the cervix may be curetted with impunity although its apposed folds of mucosa are likewise subject to adhesion. A history of instrumental abortion is obtained from some patients presenting stricture who give no other history of injury or infection which might account for cervical obstruction. In cases of this nature there has usually been repeated instrumentation; i. e., an instrumental abortion with subsequent curettage, or instrumental abortion complicated by leukorrhea, with more or less treatment for relief of the latter.

Operations on the cervix contribute their share to the total number of cervical strictures. Pocketing of the canal above the obstruction is a rather common sequel. Even in cases in which the canal is left sufficiently roomy to permit unhampered passage of a dilator, there is a surprisingly high percentage of pockets immediately above the site of repair. As a rule, these are easily demonstrable by palpation with a dilator; sometimes they are evident only on bisection of the cervix.

"Senile vaginitis" is a well known condition. I wonder how many physicians are aware that this trouble is usually ascribable to senile stricture of the cervical canal. With cessation of the menstrual function there is atrophy, with more or less shrinkage of the lumen of the canal. Lesser lesions of varied etiology, which caused no annoyance in earlier years, may now suffice to make complete obstruction. There is first a retention of mucoid secretion, then contamination of the retained material, and, finally, a seeping through of the purulent accumulation when pressure sufficient to overcome the obstruction has developed within the uterine cavity. The incidence of pyometra in these cases will be noted later.

Mention of the etiology of cervical stricture would be incomplete without emphasis of the fact that many cases of stricture are encountered in women of childbearing age without history of infection or instrumentation. Among these, a considerable proportion are found in patients with fibroid tumors. On September 1, my first day of work this autumn, I curetted an unmarried virgin patient, aged 49, preliminary to radium treatment of small bleeding fibroids. After almost ten minutes expended in unsuccessful efforts to dilate, we resorted to anterior bisection of the cervix, in order to gain entrance into the uterus. An impenetrable, firm stricture, 1 cm. within the canal, a lake-like pocket above, and a second firm stricture at the internal os were all clearly exposed to view.

PATHOLOGY AND DIAGNOSIS

Perhaps cervical strictures have been overlooked all these years because the attention has been fixed on getting at the contents of the uterus. Impatience to discover what is beyond has caused neglect of obstructions in the canal. Even though a tight cervix has been encountered, the physician's thoughts have been concentrated on the pathologic changes above, blockage of the passage being passed by as insignificant. I can even now recall numerous occasions during bygone years when cervices were found which were passable only to a flexible probe or which required partial bisection anteriorly in order to permit entrance of the finest dilator.

Now that my associates and I have taught ourselves to look for obstructions, we explore the canal with extreme gentleness. Specially made small-caliber dilators are of great help. Recourse to anesthesia is sometimes advisable in the study of cervical obstruction in patients with an apparently impassable canal in whom there is intractable leukorrhea, suggestive of obstructed drainage. Also, in patients in whom hysterectomy is inevitable, an attempt is made to preserve the cervical canal uninvaded and intact, that it may be studied in unaltered condition following operative removal.

* From the Department of Obstetrics and Gynecology of Passavant Memorial Hospital and Northwestern University Medical School.

* Read before the Wisconsin State Medical Society, Sept. 10, 1931; the Michigan State Medical Society, Sept. 23, 1931, and the meeting of the Central Association of Obstetricians and Gynecologists with the Chicago Gynecological Society, Oct. 30, 1931.

It should be noted that obstruction is not always demonstrable with certainty on routine examination in the office; the sound may catch in the cervical folds or the canal may be impassable because of inaccessibility of the uterus or sensitiveness of the patient. In such cases the pathologic changes may be sufficient to warrant examination under anesthesia, and in a considerable number of instances it will be found that the obstruction was apparent rather than real.

On the other hand, true strictures are found sometimes when least expected. Routine study of the uterus after complete hysterectomy reveals more than an occasional incidence of clearly demonstrable cervical stricture. Among half a dozen uteri, saved for the artist during the three weeks of July devoted to the preparation of this paper, bisection in the frontal plane, preliminary to the making of sketches of the normal uterine canal, revealed one uterus with an incompletely occluding firm scar, above which was a valve-like corkscrew stricture; there was retained tarry fluid, but no ballooning, above the stricture. During the same three weeks, another patient presented a gristly, firm cervical occlusion slightly below the internal os; above this obstruction were seen an adenocarcinoma and much retained débris.

It was only recently that I came to a realization of the great number of interesting observations which may be made after bisection of the uterus in the frontal plane. An astounding amount of information is thus obtainable relative to the size and configuration of the canal of the cervix and the lower uterine segment—partial obstructions, strictures, dilatations, pockets, polyps, variations in size, in form and in content; all these are at once evident, provided only that the canal is left uninvaded and undisturbed before operation and that the removed uterus is studied after bisection in the frontal plane, care being taken to obtain two exactly symmetrical anterior and posterior halves.

The failure of pathologists to note a frequent incidence of cervical strictures is readily explicable. There is not only an ever present human tendency to overlook the new, as duodenal ulcer and endometriosis were overlooked until recent years, but there is also another important factor: the uterus is usually dilated and often curetted preliminary to hysterectomy, and thus all evidence of strictural lesions is destroyed, except perhaps pathologic dilatation of the canal, and the latter is readily overlooked. The amount of disturbance of the morbid anatomic structures which occurs incident to manipulations in the operating room is often considerable; James E. Davis of Detroit informs me that in a series of 1,200 uteri sent to his laboratory, 20 per cent were so mutilated by intrauterine instrumentation that they had to be discarded in making a statistical study of the details of uterine pathology. It is self evident that strictures will not be found in uteri removed after diagnostic dilation and curettage.

To digress for a moment: Study of the frontal plane of the multiparous uterus, after removal, reveals a frequent incidence of increased size of the cervical canal; funnel-shaped widening of the canal, with the base of the funnel at the external os, is apparently characteristic of a large percentage of these uteri. Just as a mother broadens out in the hips after bearing many children, her cervical canal also widens; this at least appears true in those patients who have more or less laceration of the cervix with extension into the base of the broad ligament. The funnel-shaped contour of the canal of the multiparous uterus may account for the considerable incidence of pocketings of the cervix which is encountered in patients after neatly done, but too low, cervical repair; an external os which is restored to normal size often passes upward into a balloon-shaped, permanently widened canal, unless excision of the diseased cervix has been carried to a relatively high point.

To return to a consideration of the details of cervical strictures: Ballooning of the cervical canal above the stricture may develop to a high degree provided there is obstruction sufficient to produce notable accumulation of mucus or retention of tarry menstrual blood. The pathologic changes produced by the retained material may be very extensive. In addition to a lake-like widening of the cervical canal, the capacity of the uterine cavity may be greatly increased; pyometra is com-

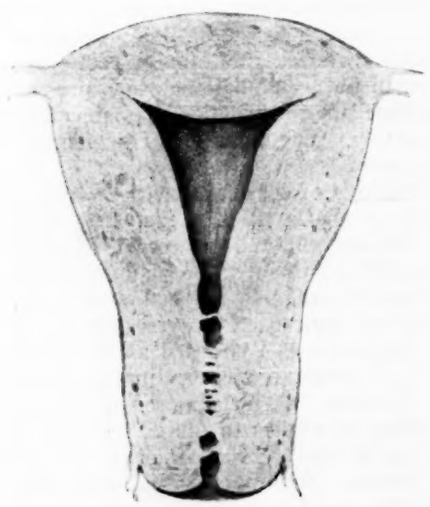

Fig. 1.—Schematic illustration, showing uterus bisected in the frontal plane, and cervical strictures incident to gonorrheal infection.

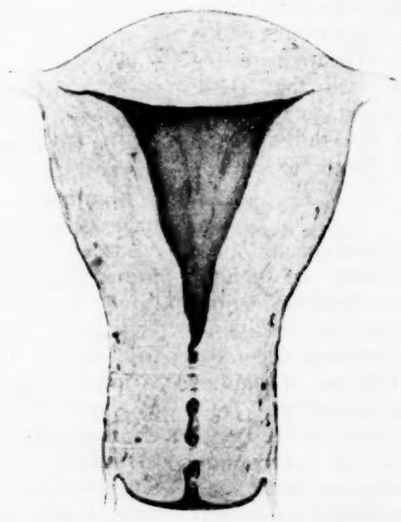

Fig. 2.—Schematic illustration, showing uterus bisected in the frontal plane, and strictures which developed subsequent to radium treatment.

Fig. 3.—Semidiagrammatic sketch of posterior half of a uterus bisected in the frontal plane after hysterectomy for relief of profuse menstruation, persistent tarry discharge and dysmenorrhea. Multiple strictures are seen which are complicated by dilatation and pocketing of the cervical canal.

monly, and probably almost invariably, ascribable to cervical obstruction. Among other complications, we have encountered some cases of endometriosis in patients with anteriorly placed uteri, in whom the etiologic factor of this disease was evidently a menstrual backflow through the tubes, incident to cervical occlusion. (I have never seen pelvic endometriosis in a patient with a well placed uterus, except in these cases of marked cervical obstruction.)

Fig. 4.—Schematic illustration, showing atrophic senile uterus, bisected in the frontal plane. Typical senile strictures of the lower cervical canal are present.

Fig. 5.—Multiparous uterus, bisected in the frontal plane after hysterectomy for persistent bleeding. Note the typical funnel-shaped widening of the cervical canal; this is notably frequent in association with deep lacerations of the cervix. Repair of the cervix should be sufficiently high to avoid postoperative pocketing of the canal.

To go a step further, I strongly suspect that nature's attempts to overcome strictural obstructions of the cervix may sometimes be a factor in the etiology of endocervical cancer; constant pressure and traumatism at the stricture site misplace cells into the deeper tissues, where they are free to grow uncontrolled. That cancer might thus develop is easily conceivable.

Inadequate drainage appears to be a chief reason for persistence of chronic leukorrhea of cervical origin. Recovery after treatment with the cautery knife is usually ascribable to the overcoming of gross obstruction in the cervical canal or to the establishment of drainage from microscopic foci of infection lodged in the deeper glands of the endocervix. With thorough drainage once established, nature does the rest. Looking backward, one must agree with the gynecologists of thirty years ago, who claimed that curetted patients were frequently cured of chronic leukorrhea; but it was the establishment of drainage incident to dilation of the obstructed cervical canal, not the scraping out of the uterus, which effected a cure.

It is a common experience in my practice to see patients well past the menopause who complain of the sudden appearance of profuse leukorrheal discharge. Obstruction of the cervix is commonly encountered in these patients. Just as it is now recognized that hemorrhage after the menopause is almost always diagnostic of uterine cancer, it may with equal assurance be stated that the otherwise inexplicable sudden appearance of profuse purulent vaginal discharge in a woman beyond the menopause is pathognomonic evidence of cervical stricture. Sometimes the obstruction has been largely overcome incident to accumulated pressure having broken through the barrier; even so, residual narrowing of the cervical canal with pocketing above is usually still evident. The relationship between "senile vaginitis" and cervical stricture has already been discussed.

It is also a common experience to have patients complain of persistent passage of tarry menstrual fluid. Although many such cases are attributable to disturbed menstrual function incident to disease of the ovaries, an occluded cervical canal is likewise a frequent cause of this disorder.

Symptoms referable to cervical obstruction are not limited to leukorrhea, the passage of tarry blood, dysmenorrhea, or occasional pyometra. Backpressure of retained secretions and menstrual blood is a hitherto unemphasized factor in the etiology of more widespread pathologic changes in the pelvis—a not rare cause of otherwise inexplicable low grade pelvic peritonitis, chronic tubal and ovarian disease, and endometriosis. Within the last several months, my associates and I have operated on two such patients, in whom the underlying cause of diffuse chronic pelvic peritonitis was apparently a backpressure into the upper pelvic zone incident to a badly diseased obstructed cervix.

TREATMENT

Every patient who has been treated with radium applied in chain tandem throughout the uterine canal should be kept under observation, for the purpose of preventing subsequent cervical stricture. There may be no symptoms despite the presence of a tightly constricted canal, but many patients return, a year or more after irradiation, annoyed by chronic leukorrhea or suffering from pelvic discomfort incident to retained secretion.

Fig. 6.—Multiparous uterus, bisected in the frontal plane after hysterectomy for bleeding fibroids. Distortion of the canal and "multiparous funnel-shaped widening" of the cervical canal are seen.

Dilation of the obstructed cervix, performed at the office, tends to be unsatisfactory except in cases in which there is simple occlusion at the external os, or a single thin valve-like barrier, or soft cobweb granulations in the higher canal. Even though dilation of a

firm stricture is accomplished, recurrence of the obstruction is frequent. Not only is this true, but the traumatism inevitably associated with overcoming an extensive fibrous stricture may result in the eventual production of a still firmer fibrosis, which resists all attempts to dilate without anesthesia.

Fig. 7.—Hysterectomy for profuse leukorrhea and uterine bleeding. Longitudinal stricture and multiple "heart-valve" strictures of the cervix with dilatation above are seen. The uterus was opened by anterior incision.

Many older women, well past the menopause, have cervical canals which are impassable to dilators, but no notable discomfort is suffered. Such uteri need not be disturbed unless there is a suspicion of pyometra or malignancy. In the event that surgical intervention appears advisable, amputation of the cervix in women past the menopause does not yield ideal results; the cervix should often be bisected anteriorly and vaginal hysterectomy resorted to in cases in which this procedure reveals extensive pathologic changes.

In younger women, undilatable strictures and their associated pathologic changes are usually amenable to cure by a modified Schroeder operation or other procedure adapted to thorough removal of the diseased cervical tissues. Such operation is usually preferable to treatment with the cautery knife. It is essential that the canal be left widely patulous.

Fig. 8.—Multiple cervical strictures in a patient, aged 54, in whom the menopause occurred at 48. Purulent leukorrhea was noted for one month prior to operation; there was no history of previous infection or instrumentation. The uterus was opened after hysterectomy by anterior incision (not bisected in the frontal plane). *A*, cicatricial bands with retention of purulent material above; *B*, complete stricture impassable to dilator; *C*, cervix spread open.

CONCLUSIONS

1. Stricture of the uterine cervix is of sufficiently frequent occurrence to warrant the interest of every one concerned with pelvic diseases in women.

2. Important symptoms are persistent leukorrhea, dysmenorrhea, the passage of tarry menstrual blood, and pelvic discomfort of varied intensity. Any one or all of these symptoms may be wanting.

3. The pathologic changes include every conceivable variety of strictural obstruction. Dilatation and pocketing of the canal are frequent. Retention of mucoid secretion or tarry blood sometimes produces serious lesions of the upper genital tract and pelvic peritoneum.

4. Strictures may usually be diagnosed by intracervical palpation with Hegar dilators of small caliber. They are often easily demonstrable and readily overcome. At other times the diagnosis is difficult, anesthesia being required not only to reveal whether a stricture is apparent or real but also, when a stricture is present, to determine its nature and the extent of the complicating pathologic changes.

5. The treatment of stricture of the cervix follows well recognized surgical principles. Dilation may suffice; amputation of the cervix is often necessary, and vaginal hysterectomy is occasionally indicated in selected cases.

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THE SYMPTOMATOLOGY OF FRONTAL AND TEMPOROSPHENOIDAL TUMORS *

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Because of the paucity of definitely known physiologic centers in the frontal lobes, the diagnosis of tumor formation in these areas has long been difficult. Neurologists have been forced to look for main guidance to the results of pressure exerted backward on either the pyramidal tracts or their cortical origins, and to the presence of change in the mental state as a confirmatory factor. Alterations in mental and emotional condition appear more frequently here than from expanding lesions elsewhere. First is seen a lessening in power of attention; irrelevant replies are made. There develops a trivial and meaningless jocosity. Short periods of excitement occur, with foolish, inept and causeless laughter. There is a tendency to take offense easily, with, on the other hand, effusive apologies over trifles. Frontal epilepsy is frequent, characterized by petit mal and sudden attacks of mental confusion. With increase in pressure, hebetude replaces these earlier manifestations; the patient lapses at times into stupor and often can be roused only with difficulty. Frontal stupor is hebephrenic and less profound than is the morbid sleep induced by hypothalamic lesions; patients of the latter order can be roused to crystal-clear consciousness, whereas frontal stupors, by stimulation, are changed to a merely turbid or muddied awareness. There is frequent and characteristic yawning, and urinary incontinence appears earlier than would be warranted by the degree of drowsiness. In this connection, I observed a soldier who, from a through and through

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* Read before the International Neurological Congress, Bern, Switzerland, Aug. 31, 1931.

gunshot wound of the right frontal lobe, had persistent urinary incontinence as his sole neurologic symptom. Headache is less prominent than is usual; possibly the lowering of mental level makes complaint less articulate. There may come forced grasping or tonic perseveration of muscular action in the contralateral hand, from involvement of the anterior part of the corpus callosum and the frontopontocerebellar fibers. In my experience, the only station characteristic of disease in this area is titubation on the heels with a tendency to retropulsion. Compression backward often produces mild contralateral pyramidal tract signs, but one must remember that a meningioma placed anteriorly may press across the midline of the brain, giving rise to a similar motor reduction and to reflex changes on the same side as the main growth.

Individuals with appropriate cerebral dominance may suffer difficulty in speech emission with no loss of internal language; deterioration of function in the lowest part of the precentral gyrus may so impoverish the finest movements of the lips and tongue as to interfere greatly with speech. It is unwise, however, to assume that language representation must always be contralateral to the prevailing handedness. It has been shown that the apparent anomaly of the so-called crossed aphasias comes from such representation following right handed and left handed stocks independently of individual handedness; i. e., a right handed person in a stock dominantly left handed has the speech area more developed on the right than on the left side of the brain. It is therefore diagnostically inadequate to regard the handedness of the patient alone; an effort should be made to determine the prevailing handedness of his stock.[1] However, these criteria—personality change, stupid drowsiness, bladder and often rectal incontinence, pyramidal implication, and difficulty in the spoken word—may all be lacking or equivocal. One syndrome when present is diagnostically decisive: a speedy reduction in ipsolateral acuity of vision due to ipsolateral compression neuritis of the optic nerve lying below the frontal lobe, coincident with papilledema and normal vision in the opposite eye. From compression of the olfactory tract there is usually also under these circumstances anosmia on the same side. One may assert that if there is no doubt that a given patient has a brain tumor, if pansinusitis is excluded, and if in that patient a unilateral retrobulbar neuritis develops, with a central scotoma and reduced visual acuity, then it is certain that the brain tumor is situated in the lower part of the frontal lobe on the same side on which the retrobulbar neuritis and the primary optic atrophy have occurred.

This syndrome evolves when, from the inception of the disease, one or the other optic nerve has been directly subjected to pressure. If, however, the tumor is placed in the substance of the frontal lobe, not implicating at first the underlying optic nerve but producing a general rise of intracranial pressure, there will be brought about a bilateral papilledema, without central scotoma or loss of visual acuity.

The tumor or chronic abscess expands until at last it presses directly on the upper surface of the ipsolateral optic nerve. The following phenomena will then result: the papilla contralateral to the tumor will remain edematous, and visual acuity in that eye will remain good. In the ipsolateral eye, visual acuity will quickly fail, a central scotoma will develop, the edema will subside rapidly, and in a few days' time well marked temporal pallor will be seen ophthalmoscopically, an expression of atrophy which at a later period will be observed over the whole disk.

1. Kennedy, Foster: Stockbrainedness, Am. J. M. Sc. 152: 849 (Dec.) 1916.

TEMPOROSPHENOIDAL TUMORS

Phenomena of lateralizing value in temporosphenoidal tumors consist of the perversions of contiguous functions. The motor tracts and their cortical origins may become so compressed as to give rise to a considerable degree of hemiplegia, which is always most severe in the face, less in the arm, and least of all in the leg. Deep pressure may introduce thalamic coloring: paresis of emotional expression in the opposite face, and occasionally increased sensitiveness in the opposite side of the body. Rarely, athetosis may appear. I have seen fluctuating pressure on the midbrain by a temporosphenoidal tumor produce fluctuating Argyll Robertson pupillary reactions.

However, the most accurate localizing sign has been described elaborately by Harvey Cushing: a quadrantic homonymous hemianopic defect in the contralateral visual field. This occurs from involvement of Meyer's loop of temporal optic fibers; should pressure continue, the pulvinar or the main optic tract may be damaged, giving rise to a complete homonymous hemianopia. When aphasia is present, it is constant in character: a poverty of recollection of names, resulting in circumlocution and descriptive speech. There is perseveration of verbal error, with no difficulty in emission; word blindness does not occur. Almost never is there any word deafness; spoken commands are accurately performed; verbal mistakes are immediately recognized and, if possible, corrected. The power of discrimination in the value of words is proved by the fact that inaccurate promptings are invariably rejected. There is no true loss of word memory, only a dimming of word recollection. The memories are for the most part intact, but their facilitation is difficult, and the patient is unable by force of will to bring them above the threshold of consciousness, below which they lie latent and beyond his conscious grasp.

The dramatic features of temporosphenoidal neoplastic disease consist of sudden dreamy mental states, their subjective projections, and the crude explosive sensations of taste and smell with characteristically related chewing reflexes and grimaces of disgust, repulsion and fear. These psychic fits often consist of the sensation of having lived through the exact scene then being enacted (le sentiment du déjà vu). So acute is the sense of familiarity that a feeling of prescience exists whereby the subject feels as though he can foretell the next action and the next word that will be spoken. To this voluminous mental state may be added a peculiar thought-feeling or a spectral word heard in a world of unreal consciousness. In such states, ghostly visitors may appear, phantoms appearing real but always known to be phantoms. One of my patients with a verified right temporosphenoidal tumor would often see men and women in eighteenth century court dress strolling across her New York apartment! A woman in Bellevue Hospital would be terrified by the repeated vision of a beckoning woman dressed in blue standing to her left side. A complex visitant of another of my patients was "a little old woman dressed in stinking rags who kept ringing a bell," a projected thought associated with a crude subjective sensation of smell due to uncinate irritation. It should be noticed here that the results of uncinate irritation are always

disgustingly unpleasant, probably a tribute to the severity of the disturbance; the pleasantest odor enormously multiplied would be unendurable. It is an odd circumstance that such complicated hallucinations as these come always from disease affecting the temporosphenoidal lobes. One of my patients, the wife of a Sussex farmer, in her attacks always saw the room filled with Negroes; yet she told me that she had never seen a Negro in her life. However, she was the daughter of a sergeant stationed in Jamaica and was brought home to England at the age of 2.

Every individual, in his ascent from embryonic to adult life, passes through the stages through which the race has passed. The lower animals make their chief intellectual contact with their environment by means of the hippocampal lobes, which in man are relatively small and unimportant. It may well be that these areas subserve in man early intellectual functions which in later life are carried on by some higher mechanism. If this theory is true, then one may regard these apparitions as involuntary resuscitations of early, perhaps infantile, memory patterns. Almost every case of temporosphenoidal neoplasm presents, in my experience, some form of dreamy mental state, but similar events may occur within physiologic bounds. Not a few people have experienced panoramic and specific auditory projections when just on the threshold of sleep. Persons so affected have each their peculiar variety. My own species is a spectral phrase, always a cliché, such as "of course not" or "yes, surely," heard dimly like a stage prompt. Then comes a second or two of normality, long enough to recognize consciously the word as subconscious and to warn myself to be ready; then comes the silent spring-shutter change within the head, which breaks the thread of my previous thought so effectively that, should I not sleep immediately, I cannot recover the thread for several, perhaps ten, minutes. This period of inactivity following involuntary energy release is a characteristic feature of motor epilepsy and helps to classify properly these events of the predormitium as paroxysmal disorders, focalized, I believe, in the temporal lobe. Such considerations would indicate that thoughts and their wayward and fantastic sister, dreams, have dynamic neural patterns written by experience and released by altered physicochemical conditions.

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Functions of the Skin.—The skin is one of the largest organs in the body, weighing, according to the data recorded by Vierordt, approximately three times as much as the liver. It is surprising, therefore, that aside from a partial understanding of its obvious protective, heat-regulating and sensory functions there is little knowledge of its physiologic activities or chemical composition and the factors that influence it. In the literature, moreover, there are many facts indicating the metabolic importance of the skin and suggesting that its functions may be as many and as varied as those of the liver. An inherent metabolism in the skin has been established by demonstrating the presence of enzymes affecting many of the complex constituents of the blood stream. Through the efforts of Wohlgemuth and his co-workers, and of Buschke and Klopstock and Melczer, the skin has been shown to contain an amylase, a diastase, glycolase, nuclease, tryptase, lipase, phenolase, catalase, phosphatase, sulphatase and carboxylase. Fahrig and Wohlgemuth and Ikebata found that skin, like other tissues, could produce lactic acid in vitro. . . . Urbach found that residual nonprotein nitrogen of the skin increased in cases of nitrogen retention. Ellinger showed that injected choline was stored in the skin. Milbradt considered the skin to be an important depot for cholesterol.—Kooyman, D. J.: Lipids of the Skin, *Arch. Dermat. & Syph.* **25**:245 (Feb.) 1932.

THE USE OF VEIN LIGATION IN THE TREATMENT OF ARTERIOSCLEROTIC AND DIABETIC GANGRENE*

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Modern studies on the physiology of the circulation have resulted in a distinct advance in the treatment of the vascular diseases of the extremities, associated with sympathetic vasomotor spasm. But the management of those disorders due to organic arterial obliteration in which sympathetic overactivity does not occur has not shared to the same extent in this progress. This is no doubt due to the fact that, in the group of obliterative vascular diseases, the primary cause of the disorder is not known and cannot be materially influenced. The pathologic process is progressive, and as the disease advances there is a steady diminution in the size of the available arterial channels and even complete obstruction of some of them. Since the etiologic agent is not known and cannot be influenced, the functional restitution of the obliterated vessels is impossible, and until more knowledge of the causative agent is available, the only therapeutic hope is to preserve and stimulate the remaining vascular pathways to carry on a competent circulation. To this end, operations on the blood vessels are justifiable, but it must always be appreciated that such an attack is indirect and essentially palliative and in no way alters the cause of the disorder.

Since serious, obliterative peripheral vascular disease occurs most frequently in patients with diabetes, the advent of insulin has altered the treatment of these cases. Before this drug was available the appearance of diabetic gangrene often demanded amputation as a life saving measure, but now it is possible to control the diabetic state and to use conservative surgical measures in many instances without endangering the life of the patient.

There are two methods of conservative treatment of obliterative arterial diseases. The first may be termed the nonsurgical means of stimulating the peripheral circulation and includes the judicious use of heat or contrast baths, the use of rest in bed combined with appropriate exercise, such as walking or Buerger exercises or both, the use of massage or other physical therapeutic agents and finally the use of nonspecific protein therapy. The latter procedure is not without danger in cases of arteriosclerosis, for instances of thrombosis have resulted from its use. The second method is the utilization of conservative surgical procedures which have the stimulation of the circulation as their object. Included in the latter class are the operations of reversal of the circulation by arteriovenous anastomosis, periarterial sympthectomy, arterial excision and vein ligation.

The latter operation, obstruction of the vein, has been used in this clinic in the treatment of obliterative vascular disease of the lower extremity for the past four years. This procedure, originated by von Oppel in 1913, has never had a wide use and only thirty-one cases are reported in the literature. There is no report of a series of cases in which the results are known a year or more after operation. It seemed worth while to record our experience with vein ligation in occlusive arterial disease. A series of twenty cases was collected,

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in which the operation was done from one to four years ago and in which the late results were known. Cases without follow-up data and those in which the patient was living and under observation less than one year were excluded. This series is unselected. Although cases are included which undoubtedly would not be chosen at present, it is felt that their presentation in this way gives the clearest conception of the indications for and limitations of the procedure.

THE RATIONALE OF VEIN LIGATION IN OCCLUSIVE ARTERIAL DISEASE

The development of elective, therapeutic venous ligation is one of the most interesting subjects in modern surgery. The present conception is that ligation of a large artery should be accompanied by ligation of its companion vein. This point of view is directly opposite to the older teaching that the vein should be preserved at all costs. The original observation which brought about this change was made by von Oppel,[1] who had a clear conception of the part played by the vein in the mechanics of a reduced arterial circulation. He [2] says: "I speak sufficiently freely of the significance of the venous stasis, because in line with experimental investigations and clinical observations I showed that limiting the return flow of the ligated vein is accompanied by an increase in the arterial pressure." Again he speaks of "suction by the veins of the collateral arterial blood," and he says "If . . . the vein is ligated the arterial and venous pressure . . . are materially elevated." Von Oppel also first proposed vein ligation as a treatment of obliterative arterial disease. Four years later the principle of elective vein ligation became firmly established through the efforts of Sir George Makins [3] The observations of Sehrt,[4] Propping,[5] Tuffier [6] and van Kend [7] contributed at this time to clarify the indications for the procedure. Subsequently the investigations of Halsted,[8] Brooks,[9] Holman [10] and others [11] have added to the information about the subject. It has been established that if occlusion of a large artery is accompanied by ligation of its companion vein it results in (1) a lower incidence of gangrene, (2) an increase in functional capacity, (3) an increase in intravascular arterial and venous pressure, (4) an increase in the distal arterial circulatory bed, and (5) probably an increase in the functional efficiency of the capillaries, though direct evidence for this is lacking. From theoretical considerations it would appear that the volume flow should be diminished, and this has recently been demonstrated by direct readings.[12]

Because of its influence on the arterial circulation, therapeutic vein ligation has been suggested in (*a*) cases of sudden arterial obstruction, as by a ligature, (*b*) cases of arteriovenous aneurysm, and (*c*) cases of gradual arterial obliteration. It is obvious that the intravascular mechanics of these conditions differ but they have in common arterial ischemia and reduced arterial pressure. It probably is because of this that vein ligation has influence. Only cases of obliterative vascular disease will be considered here. In all, thirty-one cases are reported in the literature, in which this operation has been done, but the end-results of many are not given. In the absence of definite data, it is impossible to draw conclusions from these case reports, but the impression is gained that approximately 50 per cent of the cases were benefited, while the remainder were unimproved. There are an additional twenty cases recorded in which vein ligation was done in conjunction with periarterial sympathectomy or arterial excision.[13]

SELECTION OF SUITABLE CASES

A study of the twenty unselected cases here reported shows that eight had satisfactory results, eight were failures and four terminated fatally within one year of operation without amputation. This gives a successful result in half the living cases, which corresponds to the impression gained from the literature. It follows that, since vein ligation appears to have benefit in some instances, the patients designated for the procedure should be carefully selected in order to eliminate those who are unsuitable. From the experience which has been gained in the past, it has been found convenient to group the patients with obliterative arterial disease into three classes. This classification is based on the study of the history, physical examination, laboratory procedures and observations on the following points:

1. Location and extent of gangrene if it is present.
2. Color of tissues in the elevated, horizontal and dependent positions.
3. Presence or absence of edema or infection.
4. Character of the pulsation in the arteries of the limb.
5. Rate of return of circulation after blanching by pressure.
6. Apparent temperature of the extremities.
7. The amount and character of pain.
8. Appearance of the skin and nails.
9. Presence or absence of muscle atrophy.

The following supplementary procedures may be undertaken:

1. Intradermal saline test.
2. Pachon oscillometer or recording sphygmomanometer readings.[14]
3. Temperature readings with or without nerve block.

1. Oppel, V. A.: Operation of Wieting and Reduced Circulation of Blood, Vrach. Gaz. **20**: 303, 1913; Zentralbl. f. Chir. **40**: 1241, 1913.
2. I am indebted to Dr. John Polansky for translation of the paper from the Russian.
3. Makins, George: Gunshot Injuries to the Blood Vessels, New York, William Wood & Co., 1919; Lancet **1**: 249 (Feb. 17) 1917.
4. Sehrt, E.: Ueber die künstliche Blutleere von Gliedmassen und unterer Körperhälfte, sowie über die Ursache der Gangrän des Gliedes nach Unterbindung der Arterie allein, Med. Klin. **12**: 1338 (Dec. 17) 1916.
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7. van Kend, M.: Compt. rend. conf. chir. internat., Paris, 1917, p. 348.
8. Halsted, W. S.: Ligation of the Left Subclavian Artery in Its First Portion, Johns Hopkins Hosp. Rep. **21**: 1, 1921.
9. Brooks, Barney; and Martin, K. A.: Simultaneous Ligation of Vein and Artery: An Experimental Study, J. A. M. A. **80**: 1678 (June 9) 1923. Brooks, Barney: Diseases of the Blood Vascular System of the Extremities, J. Bone & Joint Surg. **6**: 326 (April) 1924; Surgical Applications of Therapeutic Venous Obstruction, Arch. Surg. **19**: 1 (July) 1929.
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11. Heidrich, L.: Ueber Ursache und Häufigheit der Nekrose bei Ligaturen grosser Gefässstämme, Beitr. z. klin. Chir. **124**: 607, 1921. Pearse, H. E.: A New Explanation of the Improved Results Following Ligation of Both Artery and Vein, Ann. Surg. **86**: 850 (Dec.) 1927. Theis, F. V.: Ligation of Artery and Concomitant Vein in Operations on the Large Blood Vessels, Arch. Surg. **17**: 244 (Aug.) 1928. Montgomery, M. L.: Effect of Therapeutic Venous Ligation on Blood Flow in Cases of Arterial Obstruction, Proc. Soc. Exper. Biol. & Med. **27**: 178, 1929-1930. Spurrell, W. R.: An Experimental Study of the Circulatory Changes Following Ligation of the Main Artery and Vein to the Hind Limb, Guy's Hosp. Rep. **80**: 20 (Jan.) 1930.
12. Montgomery (footnote 11).
13. Stradin, P.: Ueber die periarterielle Sympathektomie, Deutsch. Ztschr. f. Chir. **194**: 338, 1926. Brooke, R.: Periarterial Sympathectomy with Ligature of the Femoral Vein in the Treatment of Diabetic Gangrene, Brit. J. Surg. **15**: 286 (Oct.) 1927. Van Gorder, G. W.: High Vein Ligation in Thrombo-Angiitis Obliterans, Ann. Surg. **90**: 88 (July) 1929. Lehman, E. P.: Sympathectomy by Arterial Excision, Arch. Surg. **21**: 838 (Nov.) 1930.
14. Pearse, H. E., and Morton, J. J.: The Blood Pressure in the Arteries of the Extremities in Normal Subjects and in Patient with Peripheral Vascular Disease, Am. J. M. Sc., to be published.

4. Roentgen treatment for calcification of vessels. (Recently arteriography with a new medium [15] has been used.)

5. Photograph or drawing to show exact extent of disease.

6. The Moschowitz test and the intradermal histamine test, which have occasionally been used.

7. Capillary microscopy (unsatisfactory because of the thickening of the epidermis in these cases).

In general, the five most useful observations are the amount of pain, the presence of gangrene, the pulsation in the peripheral vessels, the changes in appearance with shift in position and the rate of capillary return after blanching.

On the basis of the observations, cases are classified into three groups: (1) cases in which leg amputation should be done; (2) cases in which leg amputation should not be done, and (3) borderline cases.

Group 1 includes: 1. Cases presenting a poor circulation, which show either a spreading infection with lymphangiitis and perivenous inflammation or a gas bacillus infection. In the latter, leg amputation should be done immediately. Temporizing may lead to septicemia and death. 2. Cases presenting an incompetent arterial circulation. In this group are patients with a cold, pulseless, painful gangrenous extremity with atrophic muscles, hypertrophied nails and shiny skin which show ischemic pallor on elevation and cyanotic rubor on dependence. If the arterial circulation is hopelessly damaged, an amputation suitable to the patient's needs is the only beneficial procedure. Palliative measures are useless.

Group 2 includes cases in which there is infection, gangrene following infection, osteomyelitis of a phalanx, or ulcer formation, in the presence of a good circulation. The great majority of these cases will respond to proper conservative surgical measures, such as excision of the toes or drainage of infection. If the operation on the local lesion is not well executed, it may defeat the purpose of the therapy. Since the circulation is good, operations on the vessels are unwarranted.

Group 3 includes the borderline cases, in which leg amputation may or may not be needed. Some patients cannot be so neatly catalogued as those in the first two groups. They are in the borderline class, intermediate between those who should get well on conservative measures and those who are inevitably doomed to leg amputation. They show evidences of arterial obliteration by means of faint or absent dorsalis pedis and posterior tibial pulses, by slight delay in return of the circulation after blanching, by moderate coldness of the feet, by definite but not severe changes in color with shift of position, and perhaps by changes in the character of the nails and skin. Pain at rest, out of proportion to the local lesion, is absent. Gangrene or infection or both may be present. The pulse of the popliteal and femoral arteries is palpable. Since such changes indicate moderate but not hopeless arterial damage, it is highly desirable to stimulate the peripheral circulation. It is in these cases that operations on the vessels are justifiable and that vein ligation has been used as the method of choice.

There are some patients who are exceptions to the foregoing rules. They are the ones who already have one leg amputated and in whom symptoms of arterial insufficiency develop in the remaining limb. These unfortunate individuals deserve every consideration to prevent bilateral amputation. Since vein ligation is a simple procedure, done under local anesthesia, it is frequently tried even when there is little hope of improvement. The occasional saving of a limb encourages one to continue this procedure.

TABLE 1.—*Published Cases of Vein Ligation*

Author	Year	Cases	Diagnosis	Vein Ligated	Result
Von Oppel [1]	1913	6	Arteriosclerosis	Popliteal	1 failure; 5 improved; "color and heat returns . . . with no edema"; relief of pain; period of improvement up to six months
Fedorovich, cited by von Oppel [1]	?	1	Arteriosclerosis	Popliteal (?)	"Long improvement"
Lidski: Zentralbl. f. chir. **40**: 1241, 1913	1913	3	Arteriosclerosis	.....	2 successful cases, 1 failure
Horsley: J. A. M. A. **64**: 873, 1915	1915	?	Arteriosclerosis	Femoral	Use of vein ligation mentioned; number of cases or results not given
Ginsburg: Am. J. M. Sc. **154**: 328, 1917	1917	4	Thrombo-angiitis	Femoral	1 cure; 1 improved; 2 failures
Bernheim: Am. J. M. Sc. **163**: 517, 1922	1922	?	?	?	Vein ligation done in a number of instances; rise in temperature, relief of pain and healing of ulcers noted; no permanent cure
Thurston: Bull. U. S. Vet. Bur. Med. **1**: 18 1925	1925	?	Thrombo-angiitis	Femoral	Use of vein ligation mentioned; number of cases not stated; all failures
McNealy: Surg. Gynec. Obst. **40**: 45, 1925	1925	6	Arteriosclerosis	?	1 apparent cure; 5 (?) transient improvement
VanGorder: Ann. Surg. **90**: 88, 1929	1929	7	Thrombo-angiitis	Femoral ext. iliac	For ulceration of amputation stumps in 2 cases (one bilateral), all improved; remaining 5 cases improved; no amputation in from 2 to 11 months follow-up
McWhorter, cited by Theis: Arch. Surg. **17**: 244, 1928	1928	3	Thrombo-angiitis	Femoral (?)	1 improved; 2 failures
McKittrick: Arch. Surg. **21**: 555, 1930	1930	1	Arteriosclerosis	Popliteal	Failure

METHODS

In the management of cases of sclerotic arterial disease by conservative measures, patience and attention to detail are necessary. The vein ligation is but an incident in the treatment and must be associated with other measures to secure a good result. Among these are the careful preoperative preparation of the patient, the use of spinal or local anesthesia, the treatment of the local lesion and the postoperative care. The operative procedures used on the local lesion are adapted from those of McKittrick.[16] Gangrenous toes, osteomyelitis of a phalanx, ulcers and infections are treated surgically. Toes are amputated with a racquet incision, ending on the dorsum of the foot; the heads of the

15. Pearse, H. E., and Warren, S. L.: The Roentgenographic Visualization of the Arteries of the Extremities in Peripheral Vascular Disease, Ann. Surg. **94**: 1094 (Dec.) 1931.

16. McKittrick, L. S., and Pratt, T. C.: The Operative Treatment of Lesions of the Lower Extremities in Diabetes Mellitus, Arch. Surg. **21**: 555 (Oct.) 1930. McKittrick, L. S., and Root, H. F.: Diabetic Surgery, Philadelphia, Lea & Febiger, 1928.

metatarsal are excised, and the wound is converted into a gutter, drawing onto the dorsum. In the amputation of toes or the drainage of infection, continuous incisions are used, dependent drainage is sought, and pockets are avoided. Wounds are irrigated with surgical solution of chlorinated soda during the postoperative period. For the venous obstruction, either the femoral or the popliteal vein may be used. The femoral vein is exposed in Scarpa's triangle, doubly ligated, and divided below the great saphenous vein. The popliteal vein is exposed in the lower part of the popliteal space and is occluded below its junction with the lesser saphenous vein. The femoral vein is easier to expose, and its ligation is probably preferable, especially if the pulse of the popliteal artery is weak. Ligation of the external iliac vein as advocated by van Gorder has not been used.

During the postoperative period, general systemic treatment is given according to the conditions that prevail. The following accessory measures are often used: 1. The feet and legs are protected by a large cradle, which is kept warm by a light. 2. A Balkan frame with a hand trapeze is used to prevent pressure on the heels while the patient is moving about in bed. 3. Woolen socks are worn for warmth and to prevent skin excoriation. 4. The feet are bathed and anointed with hydrous wool fat daily. 5. Special care is given the back. 6. Supervised exercises, massage and gradual weight bearing are instituted.

RESULTS

The beneficial effects of vein ligation are the subjective sensation of warmth, the diminution in pain and the objective changes in the limb. These include accelerated healing of the local lesion, increase in the rate of return of the circulation after blanching, improvement in the color of the extremity, and increase in temperature of the part. It has previously been recorded [17] that a foot, formerly colder than the opposite side, is made persistently warmer by vein ligation.

TABLE 2.—*Case Reports*

Patient	Diagnosis	Duration	Local Lesion	Duration	Clinical Impression of Circulation	Dorsalis Pedis	Posterior Tibial	Popliteal	Femoral	Operation	Date	Result
1. F. B.	Thrombo-angiitis	4 mo.	Gangrene, 1st toe, left	2 weeks	Poor	0	0	0	+	Popliteal vein ligation	6/28/27	Died 2/8/28; cardiac insufficiency
2. I. G.	Diabetes	13 years	Thigh amputation with spreading gangrene stump	1 week	Poor	0	0	0	+	Femoral vein ligation	10/18/27	Satisfactory healing
3. M. S.	Diabetes	14 years	Gangrene 2d and 3d toes, right	1 week	Good	+	+	++	++	Popliteal vein ligation; amputation 2, 3 toes	10/14/27	Satisfactory 4/20/31
4. M. W.	Diabetes	?	Gangrene 1st toe, right; ulcer right foot	5 weeks	Poor	0	0	0	+	Popliteal vein ligation	12/13/27	Diabetic coma; died 5/7/28
5. D. (R.G.H.)	Thrombo-angiitis	?	Gangrene 1st toe, left	3 weeks?	Poor	0	0	0	?	Popliteal vein ligation	2/ 3/28	Amputation
6. V. D.	Diabetes	4 years	Ulcer dorsum right foot, with gangrene	10 days	Fair	0	0	+	++	Popliteal vein ligation	2/19/28	Amputation 9/22/28
7. J. B.	Diabetes	4 years	Gangrene 2d, 3d, 4th toes	4 days	Poor	0	0	0	0	Popliteal vein ligation	2/ 4/28	Amputation 2/13/28
8. C. H.	Arterio-sclerosis	?	Gangrene 1st, 2d 3d and 4th toes, right	12 days	Fair	0	0	+	++	Popliteal vein ligation; amputation toes	3/28/28	Died, cerebral hemorrhage 5/4/28
9. J. B.	Diabetes	7 years	Ulcer right foot	2 weeks	Poor	0	0	0	0	Popliteal vein ligation	4/ 2/28	Amputation 5/17/28
10. M. L.	Diabetes	?	Gangrene 3d toe, right	.....	Fair	?	0	++	++	Popliteal vein ligation; amputation toes	5/13/29	Satisfactory 5/12/31
11. R. E.	Diabetes	14 years	Gangrene left great toe Infected left great toe	1 week 1 year	Fair	0	0	+	++	Popliteal vein ligation; amputation left first toe	10/12/28	Amputation 10/29/28
12. E. T.	Diabetes	3 years	Gangrene 3d toe, left	3 days	Fair	0	0	+	++	Popliteal vein ligation; amputation toes	7/ 3/28	Amputation 10/1/28
13. C. B.	Diabetes	10 years	Gangrene 2d toe, left	.....	Fair	0	0	++	++	Popliteal vein ligation; amputation toes	3/12/29	Satisfactory 3/15/31
14. M. S.	Diabetes	?	Gangrene 1st toe, right; gangrene left foot	1 week	Fair	0	0	+	++	Popliteal vein ligation; four amputated toes; amputated left leg	3/15/29	Satisfactory 5/6/31
15. E. L.	Diabetes	6 years	Ulcer right foot; gangrene 1st and 2d toes, right	3 mo. 1 week	Fair	0	0	+	++	Popliteal vein ligation	2/18/29	Amputation 2/28/29
16. A. G.	Diabetes	3 years	Gangrene 2d toe, left	3 days	Fair	0	?	++	++	Popliteal vein ligation	5/ 9/28	Satisfactory 7/31/29
17. M. T.	Diabetes	?	Gangrene 2d toe, right	4 days	Fair	0	0	+	+	Popliteal vein ligation	1/22/30	Satisfactory 1/17/31
18. J. K.	Diabetes	1 year	Gangrene 1st toe, right, left	2 weeks	Rt. fair Lt. poor	0 0	0 0	+ 0	++ 0	Popliteal vein ligation, right; amputation left leg	2/19/29	Died, gas bacillus infection left leg 2/21/29
19. D. R.	Diabetes	3 years	Gangrene 5th toe, left	1 week	Poor	0	0	0	0	Ligation femoral vein	9/ 9/29	Amputation leg 12/24/29
20. D. R.	Diabetes	3 years	Painful cold, right foot	1 mo.	Fair	0	0	+	+	Popliteal vein ligation	4/23/30	Satisfactory 4/28/31

The only possible detrimental effect of deep venous obstruction would be edema. Brooks [18] states that it is to be expected, but experience has shown that it rarely occurs. In approximately thirty operations of vein ligation, persistent edema occurred in only one patient. In this instance the placing of the ligature on the popliteal vein above the lesser saphenous branch obstructed the deep and a part of the superficial venous return. This result is ascribed to a technical error rather than to a fundamental fault in the method.

In table 1 is given the record of the case reports previously published. From this table it is seen that four-

17. Morton, J. J., and Pearse, H. E., Jr.: Temperature Effect of Popliteal Vein Ligation in Thrombo-Angiitis Obliterans and Arteriosclerosis, Ann. Surg. 88: 233 (Aug.) 1928.

18. Brooks (footnote 9, third reference).

teen cases are diagnosed as thrombo-angiitis obliterans and seventeen as arteriosclerosis. A record of the cases reported from this clinic is given in table 2. Two are classed as thrombo-angiitis obliterans and the remaining eighteen as arteriosclerosis. This gives a total of sixteen cases of thrombo-angiitis, with ten cases showing improvement and six failure. Our own slight experience with vein ligation in thrombo-angiitis obliterans has been disappointing. In the group of peripheral vascular disease due to arteriosclerosis with or without diabetes, nine patients are reported as improved and nine as unimproved. In the series here reported, eight patients are improved after a year or more, eight have had leg amputation and four have died within a year of operation without amputation. Of the living patients, half have shown a successful outcome. This result is modified by critical analysis. For example, it will be seen in table 2 that case 3 is classed as showing a good circulation and that the pulse of the dorsalis pedis and posterior tibial arteries is perceptible. Such a patient has gangrene from infection and not from circulatory deficiency and would recover with proper treatment of the local lesion. This satisfactory result should not be credited to vein ligation.

If this patient, the patient presenting gangrene of an amputation stump (case 2), and those who died within a year (patients 1, 4, 8, 18) are excluded, there remain fourteen for analysis. Of the latter, four are classed as having a poor circulation without pulsation in either the popliteal or the femoral artery. All were failures. Such unsuitable cases should have primary leg amputation. Of the remaining ten patients, who are classed as having a fair circulation with a pulsating popliteal artery, nine had gangrene of the extremity. Of these ten patients, four (40 per cent) had leg amputation within a year and six (60 per cent) have had a satisfactory result with full return of function. This group represents properly selected cases according to the present conception.

It is felt that this series gives a fair idea of what may be expected from vein ligation in diabetic or arteriosclerotic gangrene, for the following reasons: The patients were treated by six different surgeons; the status of the peripheral circulation in the patients reported was good, bad and indifferent, and, though the conservative treatment of the lesion did not result in septicemia or death in any instance, the mortality rate from other causes was about average for such a series.

Too much should not be expected of any one procedure in these cases. Vein ligation should be only a part of the treatment of the patient and of the local lesion. Its use in appropriate cases is of value and often definitely improves the peripheral circulation so that a good functioning foot is preserved.

SUMMARY AND CONCLUSIONS

1. In obliterative vascular disease of the extremities, operations on the blood vessels are justifiable but are essentially palliative since they do not affect the cause of the original disorder.

2. The effect of venous obstruction in the presence of arterial insufficiency makes it a desirable procedure in appropriate cases.

3. Thirty-one cases in which this operation was performed are collected from the literature and twenty additional ones, followed for a year or more, are reported.

4. Analysis of these fifty-one unselected cases shows that approximately half were benefited, while leg amputation was done in the remainder after a variable period of improvement.

5. A basis for selection of cases is given which creates three groups: (1) those which show a hopelessly damaged circulation, requiring leg amputation; (2) those which result from infection and require only treatment of the local lesion, and (3) those in which there is a fair circulation, with a patent popliteal artery but absent peripheral pulses, and in which conservative treatment including vein ligation should be given.

6. Analysis of the suitable cases shows that in 40 per cent leg amputation was needed within a year, while 60 per cent had a satisfactory result with return of function.

7. Vein ligation should be considered as only a part of the care of these patients. Its use in appropriate cases definitely increases the efficiency of the circulation of the extremity and helps to avoid leg amputation.

Strong Memorial Hospital.

PATHOGENESIS OF CHRONIC HEREDITARY EDEMA OF EXTREMITIES (MILROY'S DISEASE) *

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AND
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CINCINNATI

The paucity of knowledge regarding the pathogenesis of hereditary edema of the extremities justifies the description of a characteristic case which we have had the opportunity to observe for several years and from which sections of skin have been examined on two occasions.

The earliest descriptions of this peculiar disease were published almost simultaneously by Nonne [1] and by Milroy.[2] Subsequently several additional cases have been described and various theories advanced concerning the etiology of the condition.

The characteristics of the disease may be summarized as follows:

1. The condition is always hereditary.
2. Only the lower extremities are affected.
3. There is no evidence of local obstruction or of the usual constitutional causes of edema.
4. The edema is persistent.
5. The state of general health is excellent and longevity is the rule.

As none of the recorded cases have come to autopsy and as there is no report regarding material obtained at biopsy, the pathogenesis of the condition remains obscure.

Among the hypotheses that have been advanced is the theory of Meige,[3] who believes that there is a congenital malformation of the trophic centers in the spinal cord, regulating the growth of cellular tissue. Rapin [4] postulates an embryonic dyscrasia of the mesoblast. Valobra [5] implicates the nervous centers controlling

* From the Departments of Medicine and Pathology, University of Cincinnati.

1. Nonne, M.: Vier Fälle von Elephantiasis congenita hereditara, Virchows Arch. f. path. Anat. **125**: 189, 1891.
2. Milroy, W. F.: An Undescribed Variety of Hereditary Edema, New York M. J. **16**: 505, 1892.
3. Meige, H.: Le trophoedème chronique héréditaire, Nouv. iconog. de la Salpêtrière **12**: 453, 1899.
4. Rapin, E.: Sur une forme d'hypertrophie des membres, Nouv. iconog. de la Salpêtrière **14**: 472, 1901.
5. Valobra, I.: Les oedèmes circonscrits aigus et chroniques sous la dépendance du système nerveux (rôle de la sécrétion lymphatique dans leur pathogénie), Nouv. iconog. de la Salpêtrière **18**: 201, 255, 1905.

lymph secretion. Spiller [6] suggests some endocrinopathy as the causative factor. Rietti [7] has demonstrated in one case the reversal of the albumin-globulin ratio. Milroy [8] in a recent article speculates on the rôle played by the vasomotor nerves in the causation of the edema.

Filarial invasion of the lymphatics and repeated attacks of streptococcal cellulitis have also been considered as possible etiologic agents. Hope and French,[9] in 1907, described curious acute attacks in cases of hereditary edema, with general redness and heat of the affected extremity, accompanied by chills, fever and general malaise.

REPORT OF CASE

Family History.—The grandfather of the patient had "swollen legs" and is the first member of the family in whom this condition has been noted. He was married twice and his first wife bore two daughters. One died in infancy of unknown cause; the second developed edema of the legs at puberty. Her children, two girls, were likewise affected with edema of the legs at puberty. By his second marriage several children were born, but information was obtained about only two of them. Both were males and had swelling of the legs, which began at about the fourteenth year. One, the father of the patient, has been married twice. By his first wife two children were born and have remained normal. One is 30 and the other 35 years of age. By the second wife two children were born, the patient and his brother. Both have edema of the legs.

Present Illness.—Two years ago, when 13, the patient noticed that his legs were beginning to swell. There was no pain, tenderness or constitutional disturbance. Since that time there has been progressive increase in the degree of edema, but until recently the only symptom noted was difficulty in walking, caused by the mechanical interference of the edema.

One month before admission to the hospital, the boy had a sudden acute febrile illness associated with a severe chill, headache, vomiting, tenderness and soreness in the right leg. The left leg was unchanged. He felt bad for four days thereafter, and then the symptoms disappeared. Two weeks later a similar attack occurred.

Physical Examination.—On admission, Nov. 24, 1928, the patient's temperature was 97 F., the pulse 90, and respirations 27. He weighed 205 pounds (93 Kg.). The patient was a fat boy, aged 15, with wide hips, unusually prominent breasts and scanty axillary and pubic hair (fig. 1). The external genitalia were underdeveloped. There was enormous edema of the ankles and of the legs between the knees and ankles. This edema was semisolid in character, pitting occurring only after prolonged pressure. The leg was cool and not tender, and the skin was thick, as in a case of myxedema.

Fig. 1.—Appearance of patient in November, 1928.

Fig. 2.—Appearance just before Kondoleon operation.

Fig. 3.—Posterior view of patient just before Kondoleon operation.

In addition to the observations enumerated, there was slight limitation of the temporal fields of vision. The ocular fundi were essentially normal The disks, however, were somewhat oval, with the long diameter vertically situated. There was slight ocular moto: weakness on the right side. The cranial nerves otherwise were normal. There was no nystagmus and no weakness of the arms or legs. The deep and superficial reflexes were normally active. The ears, nose and mouth showed nothing of interest. No abnormalities were noted in the neck.

Measurements of Legs

	Right Leg	Left Leg
Ankle	35 cm.	41 cm.
Calf (10 cm. below patella)	44 cm.	46 cm.
Calf (immediatciy below patella)	45 cm.	45 cm.

The heart was not enlarged. The pulse was occasionally intermittent. A soft systolic murmur was present at the apex. The lungs were clear. No tenderness was elicited in the abdomen, and the liver, kidneys and spleen were not palpable. The skeletal and lymphatic systems were normal.

The diagnoses were: (1) Milroy's disease; (2) Fröhlich's syndrome.

Laboratory Examination.—The results of the laboratory examinations may be thus summarized:

Microscopic examination of blood, negative. No filariae were seen. (Preparations made during the day and night.)

Urine, normal.

Chemical analysis of the blood: urea, 11; sugar, 65; sodium chloride, 427.

Dextrose tolerance, normal.

Roentgen examination of the skull: upright posterior clinoid and enlarged sella turcica; no erosion.

Basal metabolic rate, —15.

Perimetric examination, concentric limitation of visual fields.

Blood culture, negative.

6. Spiller, quoted by Ayala, G.: Le trophoedème chronique et le système endo-crinosympathique, Encéphale **1**: 319, 1913.
7. Rietti, Fernando: Chronic Trophedema (Meige), Policlinico (sez. med.) **31**: 520 (Oct.), 608 (Nov.) 1924.
8. Milroy, W. F.: Chronic Hereditary Edema: Milroy's Disease, J. A. M. A. **91**: 1172 (Oct. 20) 1928.
9. Hope, W. B., and French, H.: Persistent Hereditary Edema of the Legs, with Acute Exacerbations: Milroy's Disease, Quart. J. Med. **1**: 312, 1907.

Roentgen examination of the legs: enlargement of soft parts; no changes in bones.

Roentgen examination of the chest, negative.

Wassermann reaction, negative.

Electrocardiographic examination: sinus arrhythmia, left axis deviation; occasional ventricular premature contractions.

Course.—On the fifth day following admission to the hospital, a biopsy was done, a piece of skin being removed from the left thigh for microscopic and bacteriologic study. A culture from the operative incision showed the presence of hemolytic streptococci which were difficult to grow and impossible to transplant.

Fig. 4. — Specimen removed at Kondoleon operation.

On the twelfth day the patient suddenly had a chill with an elevation of temperature to 105 F. He complained of marked tenderness in the right leg, which was fiery red and much warmer than the left, in which the usual appearance persisted. Otherwise the physical examination at this time showed nothing of interest. A blood count showed 33,000 white cells with 90 per cent polymorphonuclear neutrophils.

Antistreptococcus serum given intracutaneously failed to produce local blanching; however, 100 cc. of this serum was given intravenously, and within twenty-four hours the temperature was normal, the local symptoms had practically disappeared and the white blood cells were 12,000.

Invariably, previous "acute attacks" had lasted for four days; but as to whether this apparently beneficial effect was a coincidence, the result of nonspecific protein administration or of other factors is uncertain.

Because of the low metabolic rate and obesity, thyroid extract was administered, but no improvement in the legs occurred. A Kondoleon operation was suggested, but the patient refused to give permission, and he was discharged to the outpatient department.

During the next two years the boy was seen from time to time, and definite progressive increase in the swelling of the legs, as well as increasing obesity, was noted (figs. 2 and 3).

Because of his economic status the purchase of suitable shoes and stockings became a serious problem. On account of difficulty in walking, an active occupation was impossible. As he was definitely mentally retarded, no sedentary position requiring ordinary mental capacity was obtainable. Finally the family and patient became desperate and requested that something be tried.

Dr. Mont Reid advised a Kondoleon operation in the hope of securing an anastomosis between the superficial and deep lymphatics of the leg. At the operation, which was performed on the right leg, a strip of skin, subcutaneous tissue and tensor fasciae latae was removed, the incisions starting at the anterior superior spine and extending to the ankle (fig. 4). The widest portion of skin in the specimen measured 12 mm. The incisions sloped outward and downward through very wet, "milky," subcutaneous fat and scar tissue, to the tensor fasciae latae in the thigh and to the deep fascia in the leg, the widest portions of these removed measuring 12 cm. A culture was taken from the incision, but no organisms were grown. Too brief a period has elapsed since operation to draw conclusions with regard to its success. Sistrunk[10] has reviewed the results of similar operations in his cases.

10. Sistrunk, W. E.: Further Experiences with the Kondoleon Operation for Elephantiasis, J. A. M. A. **71**: 800 (Sept. 7) 1918.

Pathologic Examination.—The first specimen to be examined was the small piece of skin removed from the patient's leg at biopsy in November, 1928. Sections were stained by the following methods: (1) van Gieson's acid fuchsin-picric acid, (2) hematoxylin-eosin, (3) Mallory's aniline blue, (4) Marchi's osmic acid, and (5) Verhoeff's elastic tissue stain. Microscopic examination (fig. 5) revealed a normal epidermis, directly beneath which there appeared to be a condensation of the superficial portion of the dermal papillary layer. With Mallory's aniline blue stain this portion of the dermis had a membranous appearance and was composed of fine collagen fibrils, which in some areas were undergoing hyalinization. No elastic tissue was found in this layer, and there seemed to be fewer capillaries than normal extending into the papillae. In the reticular layer, the heavy collagen fibers were somewhat spread apart by edematous fluid, but the edema was not nearly so marked here as in the deeper parts. The small groups of blood and lymph vessels, especially those of the subpapillary network, were surrounded by a considerable sprinkling of lymphocytes, which seemed to be more definitely related to capillaries and venules than to arterioles or larger vessels. Although the dermis was widened by the moderate amount of fluid present, there was also a definite increase in the number of collagen fibers, thus producing marked increase in the proportion of dermis to epidermis. The subcutaneous tissue was also much thicker than normal, being composed of large masses of edematous fatty tissue embedded in which were vessels and nerves. In some areas the stroma and fat cells were entirely absent, great pools of fluid being formed with no definite limiting boundaries (fig. 6). A few dilated lymphatics were seen, but much of the fluid occurred in spaces having no visible endothelial lining.

The second specimen to be studied consisted of a number of sections taken from various areas in the large piece of skin, subcutaneous tissue and tensor fasciae latae which was removed at operation (fig. 4). The same stains were used as on the preceding specimen. Microscopic examination revealed pathologic changes differing little from those in the biopsy sections just described. The epidermis was slightly thicker than in the earlier sections, but the papillary ridges were still well defined, and the membranous layer of collagen fibrils just beneath the epidermis was very sharply outlined. Although the edema of

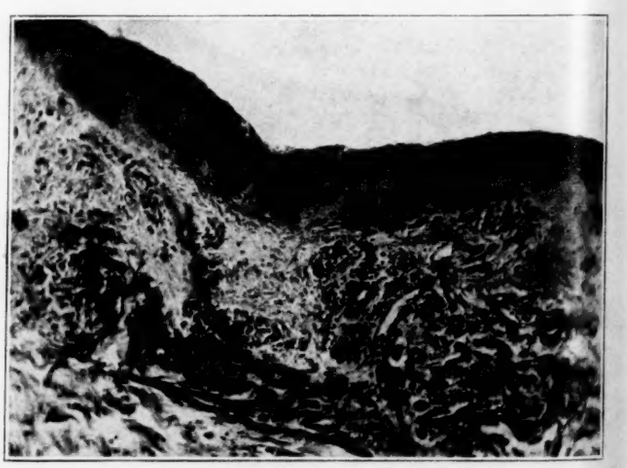

Fig. 5.—Section of epidermis and dermis showing condensation of superficial papillary layer and lymphocytic reaction in the reticular layer.

both the dermis and the subcutaneous tissues was considerably more marked than in the earlier sections, the active inflammatory changes, while still present, were in general much less marked. There were, however, a few venules in the subcutaneous areas which showed focal polymorphonuclear infiltration in their walls.

One small artery beneath the tensor fasciae latae showed very definite intimal sclerosis with narrowing of the lumen. The media of some of the arterioles in the subcutaneous areas seemed to be hypertrophied.

Marchi's method revealed no lipoid material in the pools of fluid previously described. The material in these spaces was colorless by all methods employed, with the exception of a faint pink granular appearance when eosin was used.

COMMENT

In order to determine whether the changes described occur in conditions other than Milroy's disease, sections of skin were collected from other patients, particularly those having edema of known etiology. So far, only autopsy specimens have been available, but these have all been taken within a few hours after death. Whether or not the inflammatory and other vascular changes that were found in our patient are characteristic of Milroy's disease can be determined only by studying other persons having the same disease. That they are not pathognomonic is certain, because they have been found in other conditions. The pools of fluid apparently outside vessel walls have so far not been found in sections from other conditions, including marked edemas of traumatic and cardiovascular origin. Also, in no other sections has so marked condensation of the dermal papillary layer been found. In the sections of skin showing edema of cardiovascular, traumatic and local obstructive origin, the epidermis has appeared to be thinned out and stretched, with flattening of the epidermal and papillary ridges. This appearance has been notably absent in all the sections from our case of Milroy's disease.

Fig. 6.—Section of subcutaneous tissue showing a large "pool" of fluid.

SUMMARY

1. A characteristic case of hereditary edema of the extremities has been studied for several years.

2. The pathologic alterations in the skin are described for the first time.

Cincinnati General Hospital.

The Goal of Science.—The aim of science has always been to find out the real facts, to avoid mere opinion and prejudice. By this aim and this method the scientific attitude is developed. It accepts the truth wherever it may lead, and places it above all doctrines and authorities.—Burnham, William H.: The Wholesome Personality, New York: D. Appleton and Co., 1932.

SUPPURATIVE PERICARDITIS

REPORT OF A CASE *

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CHICAGO

Suppuration within the pericardium is never primary. It may follow the occasional penetrating wound, as from a knife blade or a bullet;[1] it may appear as a metastatic abscess secondary to a general infection of the blood stream,[2] or, as most often happens, it may develop by direct lymphatic extension, generally from a suppurative focus within the mediastinum,[1] lung tissue or pleural space. Clinically, it is seen most commonly after pneumonia, and the pneumococcus is the prevailing organism.

Fig. 1.—Appearance of chest immediately before surgical drainage of the pericardium.

The diagnosis in the early stage is not always easy. Clouded as they may be by the overshadowing observations of associated pathologic changes within the chest, the signs of a small accumulation of turbid fluid within the pericardial sac may be overlooked. As the amount of pus increases, however, and the sac becomes distended, the work of the heart becomes embarrassed and the clinical signs more distinct. The general picture of severe sepsis, the anxious pinched expression of the patient, the evidence of constant pain over the heart, the dyspnea, the cyanosis, the enlarged rounded area of cardiac dulness over which the heart tones are distant or, indeed, scarcely audible, together portray a clinical picture almost classic, leaving little to be added either by the aspirating needle or by the roentgenogram.

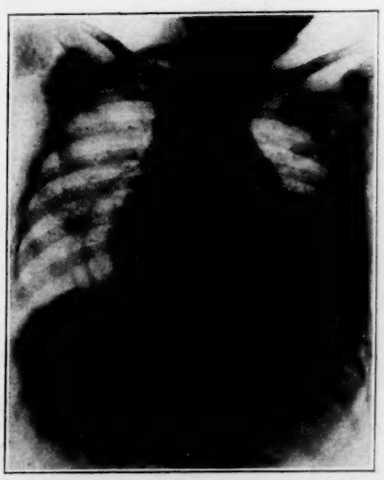

Fig. 2.—Appearance of chest three days after surgical drainage of the pericardium.

The prognosis varies with the cause but depends greatly on the treatment. Those cases which follow pneumonia are the most favorable, those secondary to a general sepsis the least. Left alone to follow the natural course, untreated cases are invariably fatal; with repeated aspiration, carried out not without considerable risk, 12 per cent [3]

* From the Children's Surgical Service, Cook County Hospital.

1. Albrecht, P.: Beitr. z. klin. Chir. **141**: 193-214, 1927.
2. Brooke, R.: Lancet **2**: 319 (Aug. 16) 1924.
3. Loucks, H. H.: Suppurative Pericarditis, Arch. Surg. **18**: 852 (March) 1929.

perhaps may show recovery; by surgical drainage the mortality has been reduced to 50 per cent.

It is not necessary here to review the literature which has been gathered together since an infected pericardium was first successfully drained by Romero more than a hundred years ago, or to recount in detail the technic involved in the various methods of approach. Suffice it to say that during this period of time the feasibility of the principle of surgical drainage has become widely recognized and the basic plan of procedure generally accepted. The logical approach is, of course, from in front and is generally sufficient, yet the experience of Loucks teaches us that pocketing of pus may take place behind the heart, necessitating a second attack from behind. Whether one penetrates the sternum in the midline, as recommended by Shipley and Winslow,[4] or whether one enters the distended sac just to the left of its margin, as advocated by most physicians, matters not a great deal, so long as the operation can be quickly done and a sufficiently large opening made. Brooke is of the opinion that early drainage in cases secondary to acute osteomyelitis is most essential, even before the fluid contains frank pus. As to the matter of tube drainage and irrigation, opinions differ, but it is my personal belief that anchoring two soft rubber tubes to the margins of the opening and carefully irrigating the cavity at intervals with warm physiologic solution of sodium chloride not only is unharmful but greatly facilitates the rapid emptying of the accumulated pus. The suggestion of Dana,[5] who recently has written on the closed drainage of acute empyema cavities by substituting air for the pus evacuated, is very interesting. As applied to the case of suppurative pericarditis, this method might appear very attractive were it not for the positive danger involved in repeated needling so close to the heart.

Fig. 3.—Patient three days after surgical drainage of the pericardium. Through the drainage tubes the cavity of the pericardium was irrigated with physiologic solution of sodium chloride.

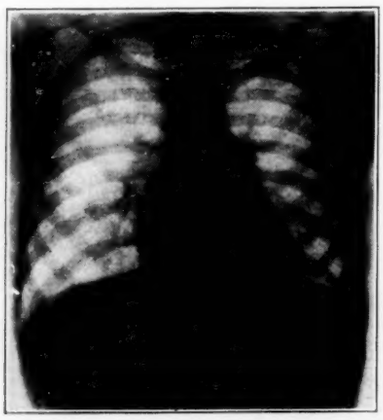

Fig. 4.—Normal appearance seven months after surgical drainage.

REPORT OF CASE

H. L., aged 8, a Negro boy, admitted to the medical service at the Cook County Hospital, March 8, 1930, was acutely ill. The temperature was 101.2, the pulse 120 and respiration 138. The diagnosis made on examination was suspected bilateral pulmonary tuberculosis. A definite history could not be obtained. Over both sides of the chest, relative dulness was elicited and bronchovesicular breathing was heard with many moist fine crepitant râles. The heart was essentially normal. The abdomen was somewhat distended, tympanitic and tender. A diagnosis of diffuse bronchopneumonia was made. A roentgenogram (fig. 1), March 10, revealed a large rounded cardiac shadow with relatively clear lung fields and led at once to the suspicion of pericarditis with effusion. During the following two days the heart tones became muffled and distant, and aspiration revealed the presence within the pericardium of thick yellow-green pus, containing the pneumococcus. March 19, the patient was transferred to the surgical service.

As the boy came to the operating table, he appeared extremely sick and was apparently in great pain. Dyspnea, cyanosis and a bulging precordium were the marked symptoms. Under local anesthesia, with the patient in the sitting position, a 4 inch incision was made just to the left of the sternal margin, and the cartilages of the fifth and sixth ribs were resected so as to expose the bulging pericardium between the border of the sternum and the main trunk of the internal mammary artery. A gush of pus, as from a hose, shot into the air, and within a few seconds a pint or more of pus covered the field. The incision was then enlarged, the fingers were introduced about the heart, and no pocketing was noted posteriorly. The ends of two soft rubber tubes were anchored to the margins of the wound, and through these the cavity was gently irrigated with warm saline solution. Relief was immediate, and the boy left the table much improved. The postoperative course was practically uneventful. Irrigation was continued at frequent intervals, the acute symptoms rapidly subsided, and the amount of discharge steadily decreased. At the end of six weeks, the wound was practically healed and the boy was allowed to go home. His clinical progress and the changes in the roentgen observations are illustrated in figures 1 to 6.

Fig. 5.—End-result one and one-half years after surgical drainage.

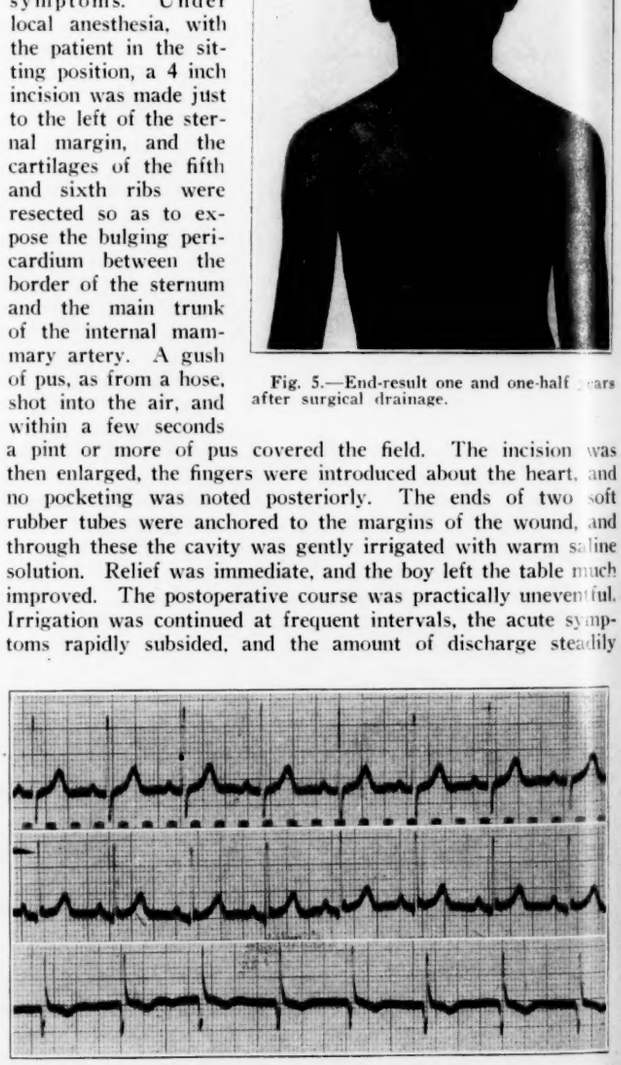

Fig. 6.—Electrocardiographic study by Dr. Clayton J. Lundy one and one-half years after surgical drainage of the pericardium.

Cardiac examination, July 22, 1931, by Dr. Clayton J. Lundy, showed a regular pulse rate of 82. There was a rather large

4. Shipley, A. M., and Winslow, N.: Tr. Am. S. A. **45**: 286, 1927.
5. Dana, J. A.: The Treatment of Empyema by Aspiration and Air Replacement Without Drainage, J. A. M. A. **96**: 1453 (May 2) 1931.

visible pulsating area in the fourth and fifth interspaces at the site of operation, just left of the sternum. The left heart border was 1.5 cm. to the left of the nipple line, which was about 9 cm. left of the midsternal line. The right heart border was just to the right of the left sternal border. The heart sounds were clear. The intensity of the second aortic sound was about equal to that of the second pulmonic sound. The systolic blood pressure was 118 and the diastolic 76 mm. of mercury. The lungs were normal. When the position of the patient was shifted from his back to his left side, the left heart border shifted to the left about 2 cm. When he was placed on the right side, the right heart border seemed unchanged. This conformed to the electrocardiographic estimation of shifting of the electrical axis, which was plus 50 degrees when the patient was on his back, plus 80 when he was on his left side, and plus 53 when he was on his right side. The electrocardiogram taken July 22, in addition, showed a diphasic Q-R-S $_1$, notched Q-R-S $_2$ near the base line, and a slurred Q-R-S $_3$. There was no clinical or electrocardiographic evidence of cardiac damage, and the adhesions after pericardostomy had not interfered with normal shifting of the heart's position when the patient turned on his left side, although there was some limitation of rotation when the patient turned on his right side.

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ACUTE PYOGENIC INFECTION OF THE SPINAL EPIDURAL SPACE *

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Of the diseases involving the coverings of the spinal cord and the cord itself, acute pyogenic infection of the epidural space is comparatively infrequent. It is, however, a definite disease entity, and the histories, physical signs and laboratory observations of the various cases reported are strikingly similar. Acquaintance with the condition, making possible an early diagnosis, is of great importance to the patient; for, although the prognosis is quite poor, adequate drainage at the earliest possible date offers the best if not the only means of treatment.

If infection is known to be present in some other part of the body, the arrival at a diagnosis of the condition may be facilitated. But in cases in which this is not known to exist, diagnosis may be a difficult procedure. This is true especially in cases in which the body does not react in the usual way to an acute purulent process, or in which the infection is too early to be localized and not extensive enough to produce a well marked febrile state. As the cord symptoms are at first due only to mechanical pressure from without the dura, the early observations may be somewhat confusing and difficult to interpret. The end-result, of course, is a complete transverse lesion of the spinal cord.

CASE 1.—V. M., a man, aged 25, had an attack of appendicitis eighteen months prior to his admission. An appendectomy was performed, and he was apparently convalescing nicely when a subphrenic abscess developed. He then had a septicemia, which was shown by positive blood cultures. The entire illness lasted four months, and several months before the onset of the present illness he was able to return to work. Two weeks before admission, he was seized with sharp pains in the right side of the chest, which were not relieved by strapping. Three days later he noticed numbness of both feet, which gradually extended up to his hips. This was accompanied by weakness of both legs, which resulted in complete paralysis within twelve hours. By this time the numbness extended well up the thorax, he was unable to void urine and had fecal incontinence.

Examination showed equal and regular pupils which reacted readily. The extra-ocular movements were normal. The ocular fundi showed considerable hyperemia. There was no facial weakness. The tongue protruded in the midline without tremor. There was some stiffness of the neck muscles. The biceps, triceps and supinator reflexes were normal. The abdominal musculature was rather tense and the abdomen distended. The umbilical reflexes were lost. There was a complete flaccid paralysis of both legs. Knee and ankle reflexes were absent, and plantar irritation caused no response. Sensation to pain was lost on either side to the level of the third thoracic segment, heat to the fourth segment and cold to the second. Loss of tactile sensibility extended up to the third segment.

Shortly after admission the temperature rose from 101.6 to 105. The leukocyte count was 5,000. A lumbar puncture was done which showed the presence of a complete subarachnoid block. The fluid was xanthochromatic and coagulated on standing. Roentgenograms of the spine showed normal aline-

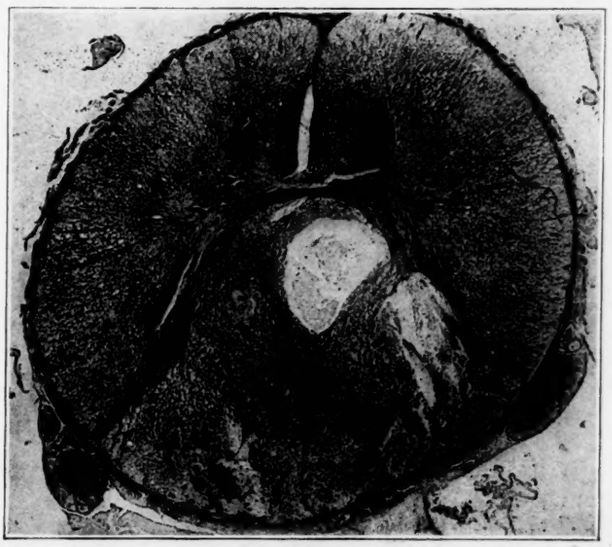

Fig. 1.—Section from lower thoracic cord. The posterior funiculi show considerable edema, and a small cystic area of degeneration is present posterior to the gray commissure. Hematoxylin-eosin stain; slightly reduced from a photomicrograph with a magnification of 50 diameters.

ment, contour and density of the vertebral bodies, with no change in the intervertebral spaces.

The history of the previous infection, the symptoms of pain followed by paralysis, and the marked degree of toxicity suggested the presence of an acute infection within the spinal canal, the lumbar puncture aiding in the diagnosis, and the upper limit determined by the sensory level. A laminectomy was done, centering over the fourth thoracic spine. Numerous abscesses, some large, others quite small, occupied the epidural space. The fat appeared red, and thick greenish pus oozed from its surface. The abscess formation extended upward to the second thoracic vertebra. More lamina were removed below, and the process was found to extend caudally to the first lumbar vertebra. The thick purulent exudate and necrotic fat were stripped from the surface of the dura, which appeared quite reddened. Although the greater portion of the pus was posterior to the dura, it was also seen to exude laterally along its surface in the lower thoracic region. The wound was irrigated thoroughly and the Carrel-Dakin method of treatment was used. Cultures of the pus showed Staphylococcus aureus.

The patient's condition did not improve following operation. About the fifth postoperative day, the wound began to show more purulent material than ever. The temperature continued in the characteristic septic course, and several times the patient was seized with severe chills. A blood culture was taken during one of these seizures, and a strain of Staphylococcus aureus was recovered from the blood stream. The patient's condition

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became progressively worse, and he died on the fifteenth day after operation. Permission for a postmortem examination was not granted; therefore we do not know whether the infection had extended inward beyond the dura. There were, however, no symptoms of a true leptomeningitis.

CASE 2.—H. D., a girl, aged 15, fell while roller skating four weeks prior to admission. At the time, she noticed some pain in the lower part of the back. Several days later, a sharp

Fig. 2.—Small area of cord undergoing necrosis. The same area may be seen in the lower left hand corner of figure 1. Hematoxylin-eosin stain; slightly reduced from a photomicrograph with a magnification of 200 diameters.

pain developed in the back, which radiated down both legs. Three days later she began to have difficulty in moving her legs and three days following this she was completely paralyzed, had retention of urine, and noticed numbness of both legs and of the entire abdomen. When admitted, she complained that the pain was quite severe and was becoming worse.

Examination showed equal and regular pupils, which reacted readily. The extra-ocular movements were normal and there was no nystagmus. No evidence of facial weakness was present and there was no disturbance of sensation of the face. The tonsils were small and showed no evidence of infection, and the oral hygiene was good. Examination of the nose and ears gave no evidence of infection. The biceps, triceps and supinator reflexes were normal. There was complete loss of sensation below the level of the seventh thoracic segment. The umbilical reflexes were absent. There was a complete flaccid paralysis of both legs, with loss of the tendon reflexes. Plantar irritation gave no response. There was no cervical rigidity, and Kernig's sign was negative.

The temperature at the time of admission to the ward was 100.5, the pulse 110, and the respiratory rate 24. The leukocyte count was 30,000. Repeated dry taps were obtained when lumbar punctures were attempted. Roentgenograms of the entire spine showed nothing abnormal.

A diagnosis was made of spinal epidural abscess in the region of the fifth thoracic vertebra. A laminectomy, centering over this area, was performed. A greenish white, purulent exudate oozed from the surface of the epidural fat. This was seen to extend upward as high as the fourth thoracic vertebra and to involve the remaining epidural tissue caudally, necessitating the removal of the laminae as far as the first lumbar vertebra. The thick purulent material was thoroughly removed and the remaining epidural tissue carefully stripped from the surface of the dura. A rather mild pachymeningitis was present. At the level of the ninth thoracic vertebra, pus was seen oozing from the anterior part of the canal. The dura was retracted laterally, and considerable pus escaped. Acriflavine packs were placed into the wound, which was allowed to remain wide open. Cultures of the pus showed Staphylococcus aureus.

Following operation, the patient's temperature continued elevated, but assumed a septic curve. Three days later, the acriflavine packing was removed and the wound appeared clean. On the eighth postoperative day the patient had a chill, following which her temperature rose to 106. Several similar chills followed, but blood cultures taken during these failed to show any growth. Her condition became progressively worse, and she died one week later.

At autopsy, considerable pus was found in the spinal canal from the seventh cervical to the first lumbar vertebra. From the ninth to the twelfth thoracic vertebra, the pus was present in the anterior as well as the posterior part of the canal. The dura was covered with a fibrinopurulent exudate and was greatly thickened throughout the entire thoracic region. When the dura was opened, the cord was found to be quite swollen, but no pus was present. The leptomeninges were matted together, thus completely obliterating the subarachnoid space. The cord was definitely softened, the softening being most marked in the lower thoracic region.

Microscopic examination of the cord at various levels showed extensive degeneration of the tracts most marked in the posterior columns in the lower thoracic segments. The amount of edema was striking. Immediately posterior to the central canal was a small cystic area, containing broken-down cord substance but no inflammatory cells (fig. 1). Other smaller areas of necrosis were present, in which were seen many newly formed vessels (fig. 2), and in the cord surrounding these areas were collections of gitter cells. In some portions of the posterior funiculi, there was a honeycomb appearance due to the marked edema (fig. 3). The nerve cells were badly degenerated, especially in the anterior horns (fig. 4).

CASE 3.—H. W., a man, aged 30, in whom a furuncle on the neck developed three weeks prior to admission, was responding well to treatment when he began to have severe pain in the back. The pain was sharp and radiated upward to the mid-thoracic region and downward to the scrotum and thighs. The pain continued, and one week after its onset he was taken to a small hospital near his home, where a lumbar puncture was done, but no fluid was obtained. The following day the pain became more severe than ever, and on the succeeding day his legs became paralyzed and he was unable to void. The pain

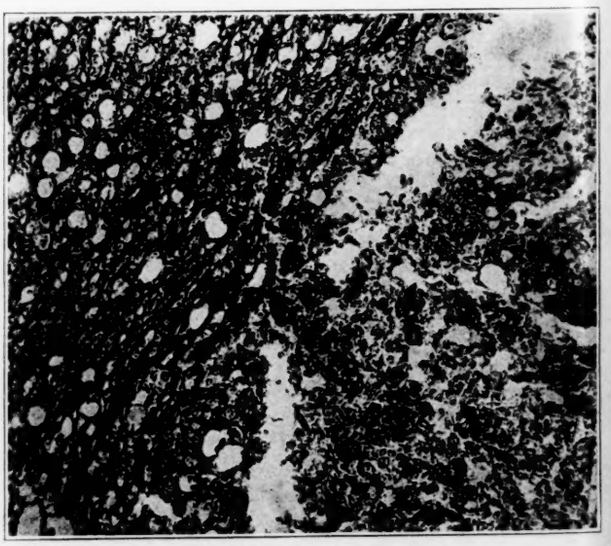

Fig. 3.—Portion of cord adjacent to small cystic area of degeneration, showing honeycomb appearance of posterior column due to marked edema; phosphotungstic acid hematoxylin. Slightly reduced from a photomicrograph with a magnification of 200 diameters.

then subsided, and he noticed numbness of the legs and abdomen. Three days later, he was admitted to University Hospital. The temperature was 104.6, and the pulse rate 160.

Neurologic examination showed the right pupil to be larger than the left. Ophthalmoscopic examination revealed a neuroretinitis in each eye. There was no paralysis of the face or tongue. The tendon reflexes of the upper extremities were

normal. The abdominal and cremasteric reflexes were absent. There was a flaccid type of paralysis of the legs, with loss of all reflexes. There was a sensory level extending to the seventh thoracic segment. Just above this level was a zone of hyperesthesia, about 2 cm. in width.

The urine contained many pus cells to the low power field. Blood examination showed a slight leukocytosis of 12,200. Roentgenograms of the spine demonstrated normal contour, alinement and density of the vertebrae. A lumbar puncture was not attempted.

A diagnosis of epidural abscess was made, and the patient was immediately prepared for operation. It was now four days since the onset of the paralysis, and the condition of the patient was quite grave; but it was believed that operation offered him his only hope. A laminectomy was performed, and the diagnosis was confirmed. An enormous amount of pus was present in the epidural space, producing considerable pressure on the dura. Cultures later showed Staphylococcus aureus. The infection extended from the fourth to the eleventh thoracic vertebra.

The postoperative period was more or less uneventful. The temperature continued elevated for the first week and then gradually became normal. Three weeks after operation the sensory level was at the tenth segment, but there was no change in the paralysis. His course has since remained stationary. We doubt whether movement will ever return. A retention catheter is necessary and urinary antiseptics are employed. The urine is remaining remarkably free from infection.

The relative infrequency of the disease is well demonstrated by the fact that Schmaltz [1] was able to collect but forty-three cases from the literature up to 1925. Dandy [2] collected a series of twenty-five cases. Cases have since been reported by Hassin,[3] Veraguth and Schnyder,[4] Sittig,[5] MacDonald [6] and Wei Yu Lin.[7]

Dandy points out that the usual history of infection of the epidural space is acute severe pain in the back, along the course of the spinal nerves or in the legs, followed by paralysis of the lower extremities within a few days after the onset. This is very similar to the histories of our cases, although the paralysis in case 3 was a little slower in appearing. The pain is no doubt due to irritation of the posterior nerve roots. Elsberg [8] states that the symptoms of transverse myelitis are the result of a local interference with the circulation of the cord and a toxic softening of the cord tissue, rather than of mechanical pressure from without. This is shown quite well in our examinations of the cord in case 2. In the gross, the cord was greatly swollen and in some areas softened to such an extent that it was difficult to section. In these regions, no surface vessels were seen. Microscopic examination showed considerable destruction of both white and gray matter. The most extensive degeneration was in the posterior columns immediately underlying that portion of the dura which showed the greatest reaction to the infection. The effect on the anterior horn cells over so many segments accounts for the flaccid type of paralysis, which, on its appearance, aids greatly in arriving at a correct diagnosis.

That the infection is usually of a secondary nature is shown by Schmaltz's collection of cases. In Dandy's series, however, three of the cases were due to primary infection within the epidural space. One of our cases was undoubtedly of a metastatic nature, one was rather questionable, and in the other no evidence of infection elsewhere in the body could be found at autopsy.

Cultures of pus were made in seventeen of Schmaltz's cases, and in fifteen of these some form of staphylococcus was found. Staphylococcus aureus was the micro-organism isolated from the pus in each of our cases, and in case 1 it was recovered from the blood stream.

The conditions most likely to be confused with epidural infection are poliomyelitis, leptomeningitis, abscess of the spinal cord and tumor of the spinal cord. Poliomyelitis may be ruled out by the presence of a sensory level and of a subarachnoid block. Lumbar puncture, with examination of the fluid, is usually sufficient to eliminate the second possibility. As to abscess of the spinal cord, the simultaneous appearance of the sensory and motor symptoms certainly suggests the presence of an intramedullary lesion, while pain, appearing several days before the onset of the paralysis, is in favor of extradural involvement. A spastic and not a flaccid type of paralysis would be expected in the case of spinal cord tumor. The severe febrile state would also be absent. Of course, these points of differentiation are merely generalities, as the diagnosis of the localization and nature of lesions of the spinal cord is very often an extremely difficult matter. And aside from an academic standpoint, a mistaken diagnosis of abscess or tumor of the cord is of no great import, as immediate laminectomy, on the sudden appearance of paralysis, is certainly indicated.

Fig. 4.—Anterior horn in lower thoracic region, showing degeneration of nerve cells. Nissl stain; slightly reduced from a photomicrograph with a magnification of 200 diameters.

From the onset, the disease assumes the character of a profound toxemia. The only method of combating the infection is, perhaps, operation with adequate drainage of all the tissue involved. As the process is always quite extensive, it requires the removal of many laminae. The greatest involvement is in the midthoracic region, posterior to the spinal nerve roots. The infection in two of our cases, however, was seen to extend into the anterior part of the spinal canal.

Following operation, the treatment of the wound depends entirely on the method most favored by the

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surgeon. Needless to say, the prognosis is quite poor, regardless of how early a diagnosis is made and how soon thereafter a laminectomy is done. Very few recoveries have been reported. The cord changes lead one to believe that unless operation is employed early in the course of the disease, the damage to the cord will be irreparable. This is only too well illustrated by our last case.

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ELLIPTIC HUMAN ERYTHROCYTES*

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Abnormal shapes of human erythrocytes are generally associated with an anemia indicative of some disease affecting the hematopoietic system. In a few rare instances, elliptic and rod-shaped red blood cells have been noted in perfectly normal individuals with otherwise normal conditions in the blood. Such oval cells have received scant attention in the literature. The first report by Dresbach[1] appeared in 1904. Up to 1929, only seven references[2] to the condition were available. These included only fifteen cases, but the hereditary transmission of these bizarre erythrocyte forms was appreciated. In 1929, twelve cases were reported[3] occurring in three generations in a family with sixteen members. In 1931, Lawrence[4] reported four additional cases, and two as yet unpublished cases have recently been studied.[5]

As only thirty-three instances of elliptic erythrocytes have been noted in mankind as a presumably nonpathogenic observation, the present study of fourteen additional cases, all in three generations of one family, may add materially to the knowledge of this most interesting subject, particularly as the condition is commonly confused with sickle-cell anemia.

REPORT OF CASES

Tony P. was the first member in his family to come under observation. He had a high percentage of elliptic erythrocytes, and, as he remained in the hospital over one year and afforded abundant opportunity for study, his case will be described in some detail.

Tony P., a man, aged 39, an Italian laborer, entered the hospital on account of a generalized psoriasis. His father and mother were born in Palermo, Italy, and remained there. They were always well and strong. His father died of malaria, at the age of 48. His mother died at the age of 59, following a fall from a window. Three brothers and two sisters are living and well; one brother died, at the age of 35, of double pneumonia. The patient had come to the United States at the age of 5 years, and he did not remember any illnesses except a fissure in the anus, which had been operated on three years previously. For several years he had had attacks of indigestion and of pain in the right side. He had had psoriasis for ten years, which had spread from the extremities to the trunk, neck and scalp. Physical examination was essentially negative except for the generalized skin lesion and some tenderness in the right upper quadrant of the abdomen.

The urine, the stool, the blood count and the gastric analysis were not remarkable. The blood Wassermann reaction was negative. A basal metabolism test was plus 21. A gastrointestinal x-ray series showed a deformity of the duodenal cap, and a gallbladder visualization showed a poor concentration of the dye in the gallbladder. Both biliary tract disease and duodenal ulcer were suspected, and both were subsequently demonstrated at operation.

While doing the routine blood count, the laboratory technician[6] noted elongated cell forms in the red cell counting chamber, and further studies of the blood were made. The bleeding time was four minutes. The coagulation time was two and one-half minutes. There were 0.8 per cent reticulocytes and 443,260 platelets per cubic millimeter of blood. The icteric index was 6, and a fragility test of the red corpuscles showed complete hemolysis at 0.33 per cent salt solution. The rate of sedimentation of the erythrocytes was also normal. Differential counts, as shown in the accompanying table, were done on wet and on dry preparations (fig. 1) of the patient's blood in order to determine the percentage of oval forms. Sealed wet preparations kept for two days and observed frequently showed no changes in the shape of the cells. A bone marrow showed the morphologic structure of the cells to be no different from that usually seen.[7]

Blood Studies of the Tony P. Family

No.	Name	Age	Marital Status	Red Blood Cells	Hemoglobin, per Cent	Percentage of Elliptic Cells: Wet	Dry	Type
1	Tony P.	39	Married	4,790,000	92	92	70	I
2	Madeline	16	Single	4,130,000	81	96	75	II
3	John	18	Single	4,500,000	90	0	0	II
4	Joseph	14	Single	4,570,000	85	98	68	II
5	Louis	10	Single	4,400,000	84	94	76	II
6	Phillip P.	42	Married	4,420,000	85	0	0	II
7	Winifred	15	Single	4,730,000	85	0	0	II
8	Josephine	16	Single	4,500,000	85	0	0	II
9	Lena	20	Married	3,980,000	77	0	0	II
10	John	19	Single	4,760,000	85	0	0	II
11	Paul P.	53	Married	4,500,000	90	75	20	II
12	Angelo	22	Single	5,400,000	107	0	0	I
13	Josephine	16	Single	4,600,000	85	94	50	III
14	Charles	24	Single	5,000,000	98	0	0	II
15	Lena	25	Married	4,500,000	92	0	0	III
16	Angelina	8	Single	4,360,000	84	0	0	II
18	Anthony	10	Single	4,280,000	84	0	0	II
17	Paul	14	Single	4,850,000	88	0	0	I
20	Joe	26	Married	5,000,000	95	84	32	II
19	Paul	3	Single	4,200,000	80	88	83	II
21	John	28	Single	4,820,000	100	0	0	II
22	Phillip	20	Single	4,860,000	95	0	0	II
23	Rose	18	Single	4,810,000	85	83	52	II
24	Anna C.	51	Married	4,810,000	88	60	30	II
25	Mary	16	Single	4,230,000	80	0	0	II
26	Josephine	18	Single	4,620,000	85	0	0	IV
27	Anthony	13	Single	4,500,000	85	0	0	IV
28	Mike	9	Single	4,200,000	82	0	0	IV
29	James	25	Single	5,000,000	90	62	14	IV
30	Paul	22	Married	4,560,000	85	90	31	II
31	John	28	Married	4,730,000	88	60	15	IV
32	Mickey	10	Single	4,370,000	85	2	Rare	IV
33	Anna	4	Single	4,460,000	84	0	0	IV
34	Steve	35	Married	4,500,000	90	0	0	IV
35	Gloria	19 mo.	Single	4,300,000	70	0	0	IV
36	Raymond	5 mo.	Single	3,390,000	56	0	0	IV
37	Dora	4	Single	4,300,000	85	0	0	IV
38	Frank P.	35	Married	4,500,000	98	0	0	IV
39	Rose	5	Single	4,390,000	84	0	0	IV
40	Lena	3	Single	4,480,000	85	0	0	IV
41	Tony	9	Single	4,800,000	88	0	0	IV

The patient's son proved to have the same unusual oval erythrocytes in both wet (fig. 2) and dry preparations of his blood, and it was decided to investigate all the members of the family as far as possible.

The relationship of the patient's family and the incidence and transmission of the unusual morphologic appearance of the red blood cells are shown in figure 3. Of the patient's living

* From the Stanford University Medical School Service at the San Francisco Laguna Honda Home.

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6. I am indebted to Miss Marian McDaniels for all the technical work which has made this report possible.

7. I am indebted to Dr. R. B. Chandler for puncturing the sternum and to Dr. H. A. Wyckoff for his report on his study of the bone marrow.

relatives, one married brother resides in New York and one married sister in Buenos Aires, so that their families could not be studied. Thirty-seven descendants of his parents are included in the family tree, and four descendants of his mother's sister. Three of four members of the first generation show unusual erythrocyte forms; nine of twenty-five of the

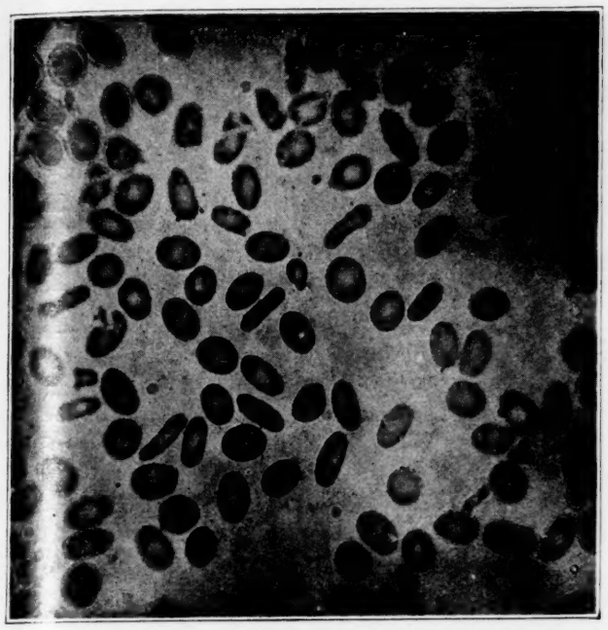

Fig. 1.—Elliptic erythrocytes seen on dry film in examination of blood of Tony P.

second generation, and two of eight of the third. Of the fourteen positive cases, four were in females and ten in males.

The changes in the blood are presented in the accompanying table. All the red blood cell counts, the hemoglobin estimations, the differential red cell counts and the blood typing were done by one technician, either at the hospital or, as in most instances, at the patient's home. All the subjects examined were in good health except Lena P., who was apparently pregnant and showed a slight anemia, baby Gloria C., who was convalescing from diphtheria, baby Raymond C., who had just left the hospital with anemia of unknown cause, and Dora C., who had whooping cough. It is worthy of note that none of the positive cases showed any definite anemia and that they occured in blood groups II, III and IV. There were only two instances of group I in the forty-one cases typed. An attempt was made to differentiate the abnormal red cell forms from the round ones in both the fresh and the dry preparations by microscopic observation. As the difference between a perfectly round cell and a very slightly oval one is impossible to detect accurately without measuring all the cells,[8] the percentages of normal and of abnormal forms present are but rough estimates, although based on repeated counts. The differentiation between an oval and a rod-shaped cell presented the same difficulties, as all intermediate forms were noted. A few truly rod-shaped and filiform cells were observed in nearly all the cases. In several instances the differential counts on the wet preparations were repeated the next day and proved to be essentially the same. The difference in the frequency of abnormal cell forms in the wet and the dry preparations has not been stressed previously, and the apparent increase of normal forms in the dry smears may be real or may be due to an alteration of the shape of the cell by the process of fixation, or, possibly, to the fact that the shifting positions of the floating cells in wet preparations make a slight ellipticity more apparent.

HEREDITARY ASPECTS

Since Dresbach's [1] original observation in 1904, the hereditary character of elliptic human red corpuscles has been suspected, and it is now firmly established. It has been demonstrated in only three successive generations of one family, although it is probable that it must have occurred in one or the other of the parents of Tony P., which would establish its incidence in at least four generations. His family demonstrates that the condition may be transmitted by either the male or the female, but it seems likely that it must be present in a parent in order to be transmitted to the offspring. This is strongly suggested by the fact that one brother, one niece and one nephew of Tony P. who had normal red cells had an aggregate of nine children all having normal cells. Also, all members of the family with abnormally shaped erythrocytes transmitted this characteristic to one or more of their offspring. Direct transmission is then common, while indirect transmission has not been proved.

Under such circumstances it is difficult to see why the condition is so rare. It is likely that it is often overlooked. Whether or not it is definitely transmitted according to the mendelian law cannot be stated, when but two family trees have been studied, each representing only three generations. However, from this very limited analysis it is strongly suggested that the trait of elliptic red cells is transmitted as a simple mendelian dominant. This cannot be settled until other large families are studied throughout several generations. Although there are as yet only eight individuals available for study in the most recent generation of the Tony P. family, two of whom show abnormal red cells, there are great potentialities for a far larger number. The data are as yet insufficient to determine whether successive generations show a decreasing percentage of abnormally formed cells or whether the degree of the ellipticity of the cells is diminishing. It would be helpful to study the branches of the family in New York and in Buenos Aires.

Elliptic erythrocytes are not limited to any race, in contradistinction to the generally accepted fact that

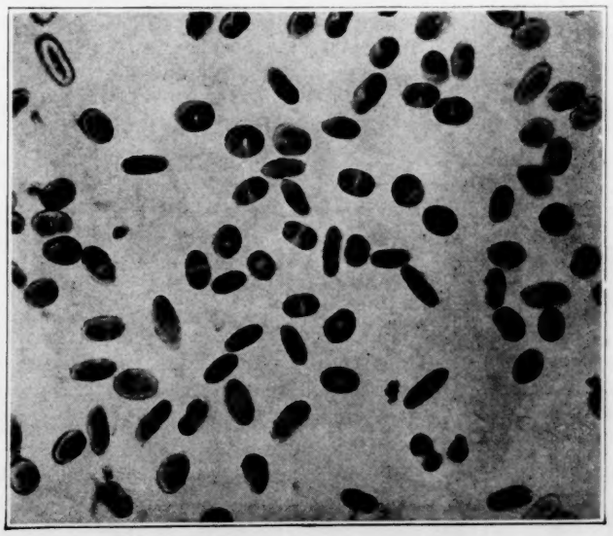

Fig. 2.—Elliptic erythrocytes seen on wet preparation in examination of blood of son of Tony P.

sickle-cell anemia occurs only in individuals with Negro blood. Oval red corpuscles have occurred in Americans of Dutch, Italian and Scotch-Irish descent; in Germans, Italians, Russian Jews, American Negroes, and in an Austrian mulatto. The condition has not been reported in the oriental or South Sea races.

8. A separate report will be made on the index of ellipticity of the red cells.

RELATIONSHIP TO ANEMIA

Recent reports [9] suggest a relationship between elliptic erythrocytes and anemia. There does not seem to be any sound basis on which to assume any such relationship. With the exception of Warren and Adam's family, including twelve positive cases of oval red cells, only five cases of anemia have occurred in the thirty-five remaining cases, and in four of these there were other causes for the anemia (gallbladder disease, with sepsis, menorrhagia, syphilis, diabetes and tuberculosis). The fifth case (Lawrence,[4] case 2) was that of an old Jewish laborer with 3,950,000 red corpuscles and 45 per cent hemoglobin. No etiologic diagnosis is recorded.

In the family of twelve individuals, some of the red cell counts are certainly low,[3] but in only two instances, except for the original patient, are the hemoglobin estimations (Sahli) below 83 per cent. As in all the other blood examinations suggesting anemia, the color index is well over 1; it seems probable that a further check on the red cell estimations might show them more compatible with the hemoglobin readings and, consequently, normal. No clinical investigations were made on the two individuals with both low red blood cell counts and low hemoglobin determinations, so that there may well have been adequate causes for the anemia.

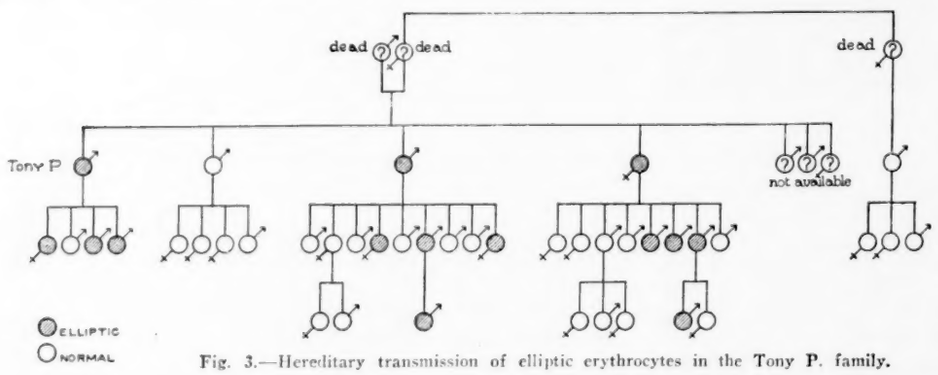

Fig. 3.—Hereditary transmission of elliptic erythrocytes in the Tony P. family.

The original patient was a young woman of the type in whom quite marked anemias of unknown etiology not infrequently occur, and it seems probable that the unusual morphologic appearance of her red corpuscles is not related to the anemia.

Because of the bizarre forms of the erythrocytes, the blood picture in cases of elliptic red cells has been confused with that of sickle cell anemia, and it has recently been suggested that a relationship between the two conditions should be considered.[4] However, they are readily differentiated, both on clinical grounds and by the changes in the blood. The two conditions are hereditary, but here their similarity ceases. In contradistinction to the benign condition of elliptic erythrocytes, the disease of sickle-cell anemia has the following characteristics: It occurs only in Negroes; it is associated with anemia and with ulcers on the legs, and the sickle form of the red cells is progressively increased on standing in sealed wet preparations. Also, the typical sickle and crescentic cells are common in cases of sickle-cell anemia, while the rest of the red corpuscles are usually round. This is in sharp contrast to the picture in which elliptic cells are seen; here there are a series of transitional forms from the round red cells to such extremely elliptic forms that they may be designated as rod shaped. Only an occasional bent or sickle form appears, and even in these the ends of the cells seem rounded rather than pointed. Although a few individual cells may seem quite similar in the two conditions, morphologically the complete blood pictures are not to be confused, particularly when it is noted that in one "sickling" typically occurs and in the other it typically does not.

On the whole there does not seem to be sufficient evidence to associate oval red cells with any form of anemia or to look on the condition otherwise than as rare and curious, without any untoward effect on human health.

HEMATOLOGY

Human oval red corpuscles are biconcave ellipsoids which maintain a constant form under most conditions. They are quite similar to the erythrocytes of the camel as described by Loo,[10] which are normally ellipsoid although not constantly biconcave. The human cell may vary in size from one with a slightly narrower width and a slightly greater length than the diameter of a normal round cell to a rodlike cell with a width of 3 microns and a length of 13 microns. When human oval red cells are repeatedly washed with isotonic salt solution, or stand in a sealed wet preparation at room temperature for longer than seventy-two hours, or have pressure applied to them, many of them assume a circular or a spherical form.[5] Although their incidence in human blood is never 100 per cent, it is characteristic that the proportion of nondiscoid forms remains constant under normal conditions and never increases on standing, as in sickle-cell anemia. Repeated differential counts on the same patients over long periods of time are essentially the same. The ellipticity is not altered by changes in incubator temperature,[11] by single washings of salt solution, by the addition of normal blood serum after the cells have been washed, or by hypertonic salt solution. In hypotonic salt solution some of the cells appear to become circular before hemolysis occurs.[12] Terry has noted oval red cells in the heart's blood at autopsy and in the serum expressed from a blood clot, and Huck and Bigalow identified their patient's oval cells in the recipient of a blood transfusion when their patient was the donor. Washed, normally shaped human erythrocytes remain unaltered when introduced into the serum of a person whose whole blood contains a large percentage of elliptic red corpuscles.

Considerable interest has centered about the microscopic examination of the bone marrow in order to determine whether the elliptic cell forms could be identified before the corpuscles entered the blood stream. The sternum has been punctured in three cases for this purpose, nothing unusual being noted; so it seems evident that the bone marrow appears normal in individuals whose blood contains oval erythrocytes.

There is no evidence of increased blood cell hemolysis as the serum bilirubin determinations are normal, and fragility tests show that the resistance of the oval red cells to salt solution is normal. Reticulocyte counts,

9. Hunter and Adams (footnote 3). Lawrence (footnote 4).

10. Loo, C. T.: Observations on Ellipsoid Erythrocytes: I. The Blood of Camelus Bactriens, Chinese J. Physiol. **3**: 325 (Oct.) 1929.

11. Lawrence (footnote 2).

12. Bernhardt (footnote 2).

platelet counts, bleeding time, clotting time, and rate of sedimentation are likewise normal. When the blood is typed according to the four recognized groups, as shown in Tony P.'s family there is nothing to suggest that the type of blood has any influence on the ellipticity of the erythrocytes. Studies of the white blood corpuscles show that they are normal.

SUMMARY

1. Up to the present time, cases presenting human elliptic erythrocytes have been very rarely reported. It seems probable that they are more common than the meager literature indicates.

2. The hereditary transmission of such unusual red cell forms is emphasized by a report of a family including forty-one members in three generations, fourteen of whom show this bizarre structure in the blood. The transmission is probably by a simple mendelian dominant.

3. Although this condition has been associated with secondary anemia and with sickle-cell anemia, there is insufficient evidence to justify any such relationship.

4. Aside from the unusual erythrocyte forms, there is nothing else remarkable in studies of the blood or of the bone marrow.

5. Elliptic human erythrocytes represent a departure from the round forms usually found and are not in themselves indicative of any disease, but are an inherited characteristic.

Shreve Building.

RHEUMATOID (INFECTIOUS) ARTHRITIS AND ACUTE RHEUMATIC FEVER

THE DIFFERENTIAL DIAGNOSIS *

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AND
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Acute rheumatic fever and rheumatoid (infectious) arthritis are often indistinguishable clinically,[1] particularly at the onset. They may both start acutely with an infection of the upper respiratory tract or with epistaxis. A moderately high temperature, chilliness, perspiration, prostration, spreading and transitory involvement of joints, acutely inflamed joints, leukocytosis and anemia are seen in the two conditions. Furthermore, the spleen and lymph nodes may be enlarged in each. Even the subcutaneous nodule,[2] hitherto considered to be one of the most characteristic phenomena of acute rheumatic fever, is definitely observed in rheumatoid (infectious) arthritis and its incidence[3] reported with increasing frequency by those who search for it. The sedimentation rate, too, no longer serves as a distinction, for the two conditions have been found to present increased rates of sedimentation of the red blood cells.[4]

Although in recent years numerous pathologic, bacteriologic and immunologic investigations[5] have increased our knowledge of the two diseases, they have perhaps created more difficulty in their differentiation. The observations have been so similar that the two diseases have been considered either manifestations of the same process,[6] or a strong relationship between the two has been considered. It is not our intention to deny or affirm these views; our work shows that in rheumatoid (infectious) arthritis the heart is minimally involved, whereas in acute rheumatic fever it is maximally involved.

For the last eighteen months an electrocardiographic study has been made on hospital patients with acute arthritis. There were seventeen patients discharged with the diagnosis of rheumatoid (infectious) arthritis, and sixty-three patients discharged with the diagnosis of acute rheumatic fever. In the rheumatoid (infectious) arthritis group there were nine males and eight females. The average age was 36 years; the range was from 13 to 53 years. The average hospital stay was fifty-three days. In the acute rheumatic fever group there were thirty-six males and twenty-seven females. The average age was 26 years, the youngest 13 years and the oldest 56 years. The average hospital stay was forty-four days.

Summary of Observations in Eighty Cases

	Rheumatoid (Infectious) Arthritis	Acute Rheumatic Fever
Cases	17	63
Average age	36 yrs.	26 yrs.
Males	9	36
Females	8	27
Average hospital stay	53 days	44 days
Tachycardia	35.3%	68.3%
Bradycardia	23.5%	20.8%
Sinus arrhythmia	29.4%	22.4%
Sino-auricular block	0	9.6%
Auricular premature beats	0	9.6%
Ventricular premature beats	0	4.8%
Nodal rhythm	0	1.6%
Nodal tachycardia	0	1.6%
Interference sinus and auriculoventricular nodes	0	3.2%
Auricular fibrillation	0	3.2%
Auricular flutter	0	3.2%
P-R 0.20 second	5.9%	12.8%
P-R over 0.20 second	11.8%	52.8%
Dropped beats	0	4.8%
R-S-T changes	0	84.8%
T wave inversions	0	40.0%
T_3 changes	0	8.0%
Change voltage Q-R-S	0	14.3%
Q-R-S changes	0	6.4%
Large Q_3	0	9.6%
R. A. D.	0	3.2%
L. A. D.	0	11.2%
P wave changes	6.7%	12.8%

The electrocardiograms were taken daily from the day of admission to the day of discharge.[7] The accompanying table summarizes our observations. The rheumatoid (infectious) arthritis changes can be reviewed quickly as the electrocardiographic observations were meager (figs. 1 and 2). There were six cases with tachycardia, i. e., rates above 100 per minute. Not once, however, was the rate above 120 per minute. Bradycardia, i. e., a heart rate below 60 per minute, was observed four times. A sinus arrhythmia was seen in

* From the Cardiographic Department and the Service of Dr. Leo Kessel, the Mount Sinai Hospital.

1. Cecil, R. L.; Nicholls, E. E., and Stainsby, W. J.: The Etiology of Rheumatoid Arthritis, Am. J. M. Sc. **181:** 12 (Jan.) 1931. Garrod, A. E., in Allbutt, T. C., and Rolleston, H. D.: A System of Medicine, New York, Macmillan Company **3:** 3, 1910. McCrae, Thomas, in Osler, William; and McCrae, Thomas: Modern Medicine, Philadelphia, Lea and Febiger **3:** 894, 1915.

2. Coombs, C. F.: Rheumatic Heart Disease, New York, William Wood & Co., 1924, p. 6.

3. Garrod (footnote 1). Coates, V.: Tissue Reaction in Disorders of the Rheumatic Group: with Particular Reference to Subcutaneous Nodules, Proc. Roy. Soc. Med. (Sect. Balneol. & Climatol.) **23:** 13 (March) 1930. Dawson, M. H., and Boots, R. H.: Subcutaneous Nodules in Rheumatoid (Chronic Infectious) Arthritis, J. A. M. A. **95:** 1894 (Dec. 20) 1930. Coates, V., and Coombs, C. F.: Rheumatic Nodule, Arch. Dis. Childhood **1:** 183 (Aug.) 1926. Dawson, M. H.; Sia, R. H. P., and Boots, R. H.: The Differential Diagnosis of Rheumatoid and Osteoarthritis: The Sedimentation Reaction and Its Value, J. Lab. & Clin. Med. **15:** 1065 (Aug.) 1930.

4. Dawson, Sia and Boots (footnote 3).

5. Cecil, Nicholls and Stainsby (footnote 1); Bacteriology of the Blood and Joints in Chronic Infectious Arthritis, Arch. Int. Med. **43:** 571 (May) 1929; Bacteriology of the Blood and Joints in Rheumatic Fever, J. Exper. Med. **50:** 617 (Nov.) 1929.

6. Coates (footnote 3). Dawson and Boots (footnote 3). Hawthorne, C. O.: Rheumatism, Rheumatoid Arthritis and Subcutaneous Nodules, London, J. and A. Churchill, 1930.

7. We consider daily tracings absolutely essential when studying acute diseases, because the abnormality may vary from hour to hour and from day to day. No digitalis or quinidine was ever prescribed; no drug was given that would itself produce changes in the electrocardiogram. The records were always made with the patient in the supine position.

five individuals. The auriculoventricular conduction time (P-R interval) increased from 0.16 to 0.20 second in one man, and to 0.21 second in another patient. In a third, the figure was unvaryingly 0.21 second, so that it is doubtful whether this faulty conduction may be ascribed to his disease.

In contrast to the slight changes noted in but three patients with rheumatoid (infectious) arthritis, we have

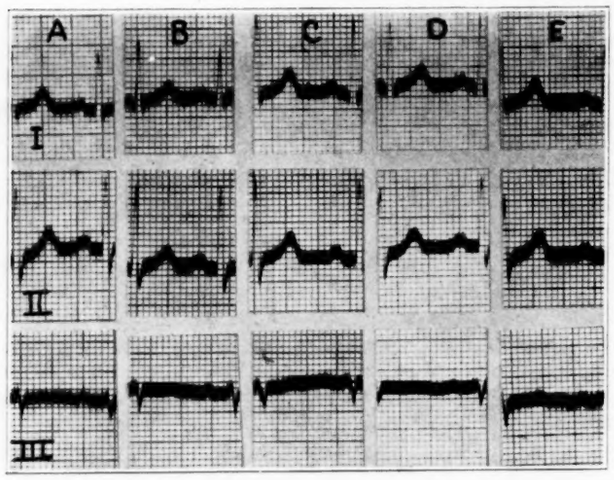

Fig. 1.—Rheumtoid (infectious) arthritis in a patient, aged 17 years: *A*, Sept. 17, 1930; *B*, September 22; *C*, September 27; *D*, October 3; *E*, October 9. (Continued in figure 2.)

a 100 per cent involvement of the heart in our sixty-three patients with acute rheumatic fever, as evidenced by marked electrocardiographic observations. These electrocardiographic evidences of myocardial involvement have been sino-auricular block, nodal rhythm, interference of the sinus and auriculoventricular nodes, auricular fibrillation, auricular flutter, auriculoventricular (P-R) intervals of 0.21 second or more, heart block with dropped beats, definite R-S-T abnormalities, T wave inversions, and transient widening, notching and slurring of the Q-R-S group.

Among the sixty-three rheumatic fever cases there were forty-three patients with tachycardia, the heart rate not uncommonly reaching 140 to 150 a minute. There were thirteen patients with bradycardia. Sinus arrhythmia was observed in fourteen patients and sino-auricular block in six patients. Auricular premature beats were recorded six times; ventricular, three. A simple nodal rhythm and a nodal tachycardia were each observed once. Interference of the sinus and auriculoventricular nodes was noted twice. Auricular fibrillation and auricular flutter were each seen twice.

Increased auriculoventricular conduction time (P-R interval) to 0.20 second occurred in eight cases and to more than 0.20 second in thirty-three cases, making a total of 65.6 per cent. Auriculoventricular blocks of 0.56 second were seen in the tracings. Auriculoventricular block with dropped beats were seen in three patients. The R-S-T abnormalities occurred with the greatest frequency, i. e., in fifty-three cases (84.8 per cent). T wave inversions were graphically noted in twenty-five cases (40 per cent).

COMMENT

The high incidence of myocardial involvement in acute rheumatic fever is not new. Many authors have obtained similar results. Some have found an incidence of more than 90 per cent. Cohn and Swift, and Rothschild, Sacks and Libman have predicted that every case would show myocardial involvement if daily electrocardiograms were taken.[8] This is exactly what we did. Rheumatoid (infectious) arthritis, on the other hand, has never been seriously investigated with the electrocardiogram. Rothschild, Sacks and Libman [8] did say, "In five cases of acute polyarthritis, which differed clinically from the rheumatic form, the electrical tracings exhibited none of the alterations noted in rheumatic fever." Their records were taken only once a week. These authors, however, suggested the possible clinical application of the electrocardiogram to the differential diagnosis of the two diseases.

In the many hundreds of tracings taken on the patients suffering from rheumatoid (infectious) arthritis, not once was there any change commonly considered indicative of myocardial involvement; i. e., no R-S-T abnormality, no T wave inversion, no auricular fibrillation, no auricular flutter, no case of auriculoventricular (P-R) block of more than 0.21 second, nor any block with dropped beats.

CONCLUSION

In seventeen patients with rheumatoid (infectious) arthritis on whom electrocardiograms were taken daily for an average of fifty-three days, only the slightest evidence of myocardial involvement was recorded.

In sixty-three cases of acute rheumatic fever, definite electrocardiographic evidence of myocardial involvement appeared in 100 per cent.

Rheumatoid (infectious) arthritis, no matter what it may be, is not a disease of the heart; acute rheumatic fever is preeminently a carditis.

The clinical application is this. In a case in which the differential diagnosis between rheumatoid (infectious) arthritis and acute rheumatic fever is difficult, if there are no electrocardiographic evidences of myocardial involvement, we would be prone to call it the former disease, whereas when there are electrical tracings definitely indicative of myocardial involvement we would be prone to call the disease acute rheumatic fever. The former affects the heart to the slightest degree, if at all; the latter to a maximum extent.

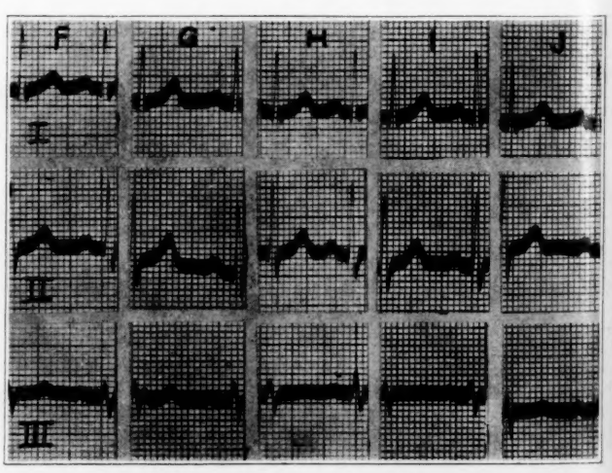

Fig. 2 (continued from figure 1).—*F*, October 15; *G*, October 20; *H*, October 25; *I*, October 31; *J*, November 5. No changes were observed in daily electrocardiograms taken over a period of forty-nine days.

124 East Sixty-First Street.

8. Parkinson, J.; Gosse, A. H., and Gunson, E. B.: The Heart and Its Rhythm in Acute Rheumatism, Quart. J. Med. **13**: 363 (July) 1920. Cohn, A. E., and Swift, H. F.: The Electrocardiographic Evidence of Myocardial Involvement in Rheumatic Fever, J. Exper. Med. **39**: 1 (Jan.) 1924. Rothschild, M. A.; Sacks, Benjamin; and Libman, Emanuel: The Disturbances of the Cardiac Mechanism in Subacute Bacterial Endocarditis and Rheumatic Fever, Am. Heart J. **2**: 356 (April) 1927.

DEXTROCARDIA SECONDARY TO EVENTRATION OF THE DIAPHRAGM

REPORT OF AN ASYMPTOMATIC CASE

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Dextrocardia with general transposition of the viscera is not particularly uncommon and offers no great difficulty in diagnosis. Isolated intrinsic dextrocardia without other grave cardiovascular maldevelopment is one of the rarest anomalies. To find a normal heart on the right side above normal liver dulness therefore suggests that the position of the heart is secondary to a defective diaphragm. Such displacement of the heart has been mentioned in many recent publications on eventration and hernia of the diaphragm. However, this point has not been emphasized in cardiologic literature, probably because, if any symptoms are present, subphrenic ones usually dominate the clinical picture.

In 1927, Christian[1] said of eventration of the diaphragm:

> The great majority of reported cases has occurred in males. It is almost invariably on the left side. . . . As the condition is congenital, both thoracic and abdominal viscera accommodate themselves to the defect, and as a result there are no symptoms. . . . The lung is not compressed, but the heart may be displaced upward or to the right. . . . The condition is shown definitely by the roentgen rays. The contour of the left leaflet is that of a smooth, sharply defined, bow-shaped shadow . . . The conditions most likely to simulate eventration are pneumothorax and congenital hernia. . . . As eventration never gives rise to any disturbance and is usually an accidental discovery, it requires no treatment.

More recently, however, Harrington[2] has said, "In some instances it is very difficult to differentiate between an eventration and a true diaphragmatic hernia." Moore and Kirklin,[3] the roentgenologists of the Mayo Clinic, have concurred in this: if the hernia is large, the heart is displaced to the right, and shading of the lung in proportion to the amount of compression is noted. In addition, they say:

> Reversed, or paradoxical, respiratory movement of the affected arch was for a time regarded as a distinguishing sign, but recent observers agree that respiratory movement may be normal, diminished, absent or reversed in either hernia or eventration. A more practical point, advanced by Morison, is that in eventration the upper level of the barium in the stomach always coincides with the esophageal opening when the patient is erect, whereas in hernia the upper level of the gastric content is likely to be above the plane of the esophageal aperture. . . . No attempt has been made at the Mayo Clinic to repair the diaphragm in cases of eventration.

Truesdale, who has emphasized cardiac symptoms in writing of diaphragmatic hernia, in a recent paper[4] on the subject said, "A dextrocardia often serves as a key to the diagnosis." He proved that the position of the diaphragm might be responsible for dextrocardia by reporting one case in which the heart was on the right before operation but reverted to its normal position after repair of the hernia.

REPORT OF CASE

History.—A school boy, aged 16, was referred for cardiologic investigation on account of dextroposition of the heart. His father had died at 29, following appendectomy. His mother was living and well, and had had only the one pregnancy. This had terminated with normal labor and delivery. The patient had been very wide awake from the beginning and had weighed 7 pounds (3.2 Kg.) at birth. When he was about 6 months old, his father had him on his lap with both hands around him when he discovered that the heart beat was strong on the right side. A physician had corroborated this observation at the time. Except for frequent attacks of tonsillitis, the child's health had been excellent until pneumonia at 8 years. The following year, he had been in bed for some weeks with diphtheria, which was said to have left him with an enlarged heart. Two years after this he had won a 4 mile cross-country race. At 12 years, a fluoroscopic examination of the chest had been made, and he had been told again that his heart was on the right and that it was "the size of a grown man's heart." Fortunately this did not worry the boy, and he continued to lead a normal athletic life. He played end on his school's football team, and indeed considered his "wind" better than that of most of his friends. He had never experienced any symptoms referable to the heart or abdominal viscera, although he was subject to frequent infections of the upper respiratory tract. His scholastic record was good.

Examination.—The patient was a muscular youth, 68¼ inches (173.4 cm.) tall, weighing 133 pounds (60.3 Kg.). There was no evidence of cyanosis or of clubbing. The eyegrounds were normal. The nasal septum was slightly deflected. The teeth were in good condition, and the tonsils had been cleanly removed. The thyroid gland was not enlarged. A rachitic rosary was present. The maximum thrust of the heart was in the fourth interspace, 6 cm. to the right of the midline, and systolic undulation was visible in the second and third interspaces above this. There were no thrills. On the right, dulness extended 3.0 cm. from the midline in the first interspace, 4.0 cm. in the second, 5.5 cm. in the third, 6.0 cm. in the fourth, and 4.5 cm. in the fifth; on the left, dulness extended 0, 2.0, 3.0, 3.5 and 2.0 cm., respectively. There were no murmurs, and the quality of the heart sounds was good. Rarely an extrasystole was detected. The right lung was normal. There was no dulness over the left lung; voice and breath sounds were normally transmitted throughout. Percussion revealed flatness over the normal area of the liver, and tympany over that of the stomach; the abdomen was soft. The genital organs, including the prostate and vesicles, the extremities and the principal reflexes, all seemed equally normal.

Urinalysis and the Kahn test gave negative results. The red cell count was 6,080,000; the leukocyte count was 6,200, and the differential count was normal. Hemoglobin was 15.2 Gm. per hundred cubic centimeters of blood.

On fluoroscopic examination, it was immediately seen that the heart was pushed to the right by the upper part of the stomach; this, distended by an air bubble, came up to the level of the fourth rib. Gas also visualized the splenic flexure of the colon to the right of the stomach, though not up so high. The upper border of these viscera appeared smooth as if under a relaxed, though intact, diaphragm. With some deep inspirations, the movement of the left half of the diaphragm seemed to us paradoxical; with others, normal though diminished. The lateral part of this leaflet always moved medially with inspiration. The patient was studied under the fluoroscope on several occasions, and with Dr. Edgar D. Shanks in consultation. Visualization of the esophagus with barium proved that it passed behind the aorta and its lower end turned sharply to the left and entered the stomach horizontally. The upper level of the barium in the stomach did not rise above the esophageal opening. The stomach extended as far down as the umbilicus and emptied normally into the duodenum on the right; peristalsis was somewhat hyperactive. After the ingestion of more barium, with the hips elevated above the shoulders, the barium entered freely the intrathoracic part of the stomach: there was no constriction at the normal level of the diaphragm

1. Christian, H. A.: Eventration of the Diaphragm, in Osler, William; and McCrae, Thomas: Modern Medicine, ed. 3, Philadelphia, Lea & Febiger **4**: 344, 1927.
2. Harrington, S. W.: Personal communication to L. M. B.
3. Moore, A. B., and Kirklin, B. R.: Progress in the Roentgenologic Diagnosis of Diaphragmatic Hernia, J. A. M. A. **95**: 1966 (Dec. 27) 1930.
4. Truesdale, P. E.: Diaphragmatic Hernia in a Child, Aged One Year, J. A. M. A. **96**: 847 (March 14) 1931.

(fig. 1). The anteroposterior teleroentgenogram (fig. 2) corroborated the fluoroscopic examination; the heart was not enlarged, and markings of the lung were superimposed over the gas bubble in the stomach: there was no atelectasis. In an oblique view (fig. 3), however, there was a break in the contour of the diaphragm near its lateral origin.

On reexamination, it was found that the normal resonance of the left lung in front was altered to tympany at the level of the fifth rib. In the recumbent position, tympany extended to the level of the fourth rib. When the patient jumped up and down, with the stethoscope medial to the left nipple, splashing in the stomach was audible. The patient told us at a later interview that the position of the heart shifted when he turned over in bed. We found that when he lay on his right side the right border of the heart was felt and percussed 7 cm. from the midline, and the left border was percussed at the midline. When he lay on his left side, the right border extended 4.5 cm. from the midline, and the left border seemed to be 4 cm. from it.

Fig. 1.—Roentgenogram taken with the stomach filled with barium and with the hips above the shoulders. The cardiac portion of the esophagus is marked with an arrow. There is no constriction of the stomach at the normal level of the diaphragmatic arch.

In the electrocardiogram, by Dr. E. A. Bancker, the P, R and T waves were upright in all leads and there was no evidence of axis deviation or of abnormal cardiac mechanism.

COMMENT

At the conclusion of the history and physical examination, we were sure that this boy's heart was functionally normal. The position of the liver, stomach and left testicle established that this was not a case of general transposition. We knew that this dextroposition dated from early infancy: if not congenital, it had at least long preceded any disease affecting the intrathoracic organs. The very outline of the precordial dulness, moreover, suggested that the heart had been pushed to the right. The tympany at the base of the left lung in front should have been noted at the first examination. We believe that we should have been able to diagnose before roentgenologic examination that the position of the heart was secondary to that of the diaphragm.

It is to be emphasized that, in contrast to the "mirror picture heart" of general transposition, the heart in this case was entirely normal except for its displacement. This was proved by the roentgenogram and the electrocardiogram.

To determine whether this diaphragmatic lesion was eventration or hernia puzzled us until we read the discussion of the diaphragm by Assmann.[5] This enabled us to formulate the following theory as to our case: 1. When deep inspiration was abdominal in character, the left half of the diaphragm descended with the right but was not strong enough to descend as far as the normal half. 2. When deep inspiration was thoracic, the negative intrathoracic pressure and the elevation of the anterior attachment caused the left half of the diaphragm to ascend more than could be compensated for by its weakened musculature. 3. The muscular pull on the posterior and lateral attachments produced the medial inclination of the lateral part of the diaphragm. After formulating this theory, we examined the boy fluoroscopically for the fifth time. With forced thoracic inspiration the left half of the diaphragm did ascend; with forced abdominal inspiration it did descend.

Assmann also reported cases in which there was, in deep inspiration, a localized bulging in the upper contour of the normal diaphragm. This phenomenon was observed in persons otherwise normal, although it was noted more often in cases of tracheal or bronchial stenosis. Assmann explained it principally on the basis of inequality of the strength of various groups of muscle fibers.

The break in the contour of the diaphragm in our case is then not good evidence of hernia. If the lesion is hernia, the hernia is so large that repair would be difficult if not impossible, and strangulation is not probable; moreover, in the absence of symptoms neither the patient nor his mother would consider operation. The differential diagnosis in this case is therefore largely a matter of academic interest. However, we believe that the writings of Christian, Moore and Kirklin (including Morison), and Assmann justify us in the diagnosis of eventration of the diaphragm. If the lesion is eventration, "it requires no treatment."

We feel more confident that this boy's anomaly requires no treatment since reading the report by Livengood[6] of a case of isolated dextrocardia in a woman, aged 74, who had borne two children. From study of the roentgenologic and electrocardiographic data presented by him, we believe that this dextrocardia was also secondary to eventration of the diaphragm. However, eventration, though rare in women, is not always benign, for Dr. R. A. Bartholomew[7] is reporting a fatal case in a young woman who had been healthy until several months pregnant. In the investigation of abdominal symptoms developing at that time, it was found that the left half of the diaphragm was elevated and the heart pushed to the right. She would not consent to an abortion, so cesarean section was planned when the fetus was viable. Shortly before this time, complications precipitated labor, which resulted in complete rupture of the diaphragm and death. Eventration of the diaphragm is then a menace to the life of women in the child-bearing age. In the case of

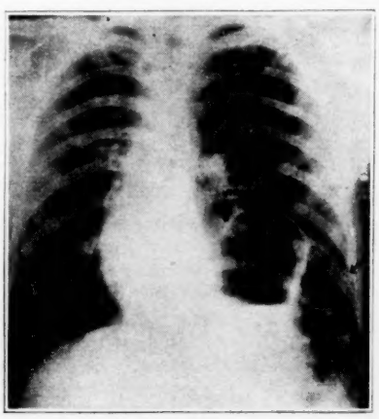

Fig. 2.—Teleroentgenogram showing the heart normal in size and contour (T. T., 27; M. R., 3.2; M. L., 6.4) but pushed to the right by the stomach, the left ventricle resting against the cardia. The right diaphragm is normal; the left is poorly developed and ascends to the fourth rib in the midclavicular line, being pushed up by the stomach and intestine. There is no pulmonary atelectasis.

5. Assmann, Herbert: Klinische Röntgendiagnostik der inneren Erkrankungen, ed. 3, Leipzig, F. C. W. Vogel, 1924, Zwerchfell, p. 357.

6. Livengood, H. R.: Dextrocardia: Report of a Case, J. M. Soc. New Jersey **27**: 235 (March) 1930.

7. Dr. Bartholomew has graciously authorized this preliminary report. The patient was also examined clinically by one of us (W. T. B.).

males, it would appear possible to us that any factor causing extraordinary increase in intra-abdominal pressure might act as labor did in Bartholomew's case. We have therefore advised this boy against the more violent forms of exercise.

SUMMARY

Congenital dextroposition of the normal heart without evidence of transposition of other viscera in most cases is probably secondary to eventration of the diaphragm. A case of this type in an athletic youth has been reported. The condition has been entirely asymptomatic up to the present, and we believe that the position of his heart will never cause the patient any trouble. It is possible, however, that subphrenic symptoms may develop or that an extraordinary increase in intra-abdominal pressure, brought on by trauma or tremendous exertion, may result in rupture of the weakened diaphragm.

Fig. 3.—Tracing of roentgenogram taken at 6 feet, with the patient's left breast and shoulder against the plate. The arrow indicates the break in the contour of the diaphragm; *S*, the stomach; *H*, the heart.

Medical Arts Building.

Clinical Notes, Suggestions and New Instruments

TYPHOID HEPATOCHOLANGEITIS

CURE OF A "CARRIER" OF TWENTY-SIX YEARS' DURATION, WITH A FIVE YEAR "FOLLOW UP"

B. B. VINCENT LYON, M.D., Sc.D., PHILADELPHIA

The case reported here deserves to be put on record because it indicates what may be accomplished in severe hepatocholangeitis with the persistent use of modern methods of treatment.[1]

History.—C. P. R., a man, aged 52, referred by Dr. Crawford Green of Troy, N. Y., first seen by me, Feb. 23, 1925, had had in 1898, at the age of 26, a fever diagnosed as malaria, while in army service in the Spanish War. This confined him to bed for a few days at a time, alternately defervescing and relapsing over a period of about six weeks. Between the ages of 26 and 30 he had attacks of epigastric pain associated with vomiting, jaundice and fever. These attacks occurred about every two months. Since the age of 30 he had been free from such attacks until June, 1923 (that is, for twenty-one years), but during this period he definitely damaged his cardiovascular system, liver and kidneys.

From June, 1923, he had several monthly attacks of pain in the upper right quadrant with recurring jaundice, nausea and vomiting, which led to an operation for biliary tract disease in April, 1924, in Troy, N. Y. There were found dense widespread adhesions, marked pericholecystitis, a small contracted gallbladder containing multiple stones and some pus, and some enlargement at the head of the pancreas. A cholecystectomy was done with difficulty.

Following this he convalesced slowly but with incomplete relief of the distress in the upper right quadrant. During June, 1924, he noticed soreness and tenderness under the upper abdominal scar, and during July and August a fluctuant mass could be palpated which gradually "pointed" in the lower right quadrant. He was taken to Albany, N. Y., where on Aug. 25, 1924, under local anesthesia another surgeon incised this mass. His notes are as follows: "Primary incision carried down into the sheath of right rectus muscle; on retracting fibers, there was exposed an abscessed cavity with thick fibrous walls containing a quantity of grayish thick pus, apparently under pressure, which had collected between the right rectus muscle and its posterior sheath, just below the level of the navel. The pus was evacuated, the cavity curetted, cultures were made. It was necessary to pack the wound with iodoform gauze that afternoon to control hemorrhage. B. typhosus was isolated in pure culture; the Widal agglutination reaction was positive; the Wassermann reaction was negative. B. typhosus was also recovered from the stools."

It seems necessary, therefore, to consider that the low running fever in 1898, instead of being malaria, was probably a "walking typhoid." At this point it is of moment to state that this patient was then listed by the New York State Board of Health as a typhoid carrier, twenty-six years after primary infection. A brief report of his case will be found in the *New York State Medical Journal* of Jan. 16, 1925, under Health Board Notes.

Following the patient's second hospital discharge he continued to complain of pain in the upper right quadrant, epigastric burning, distention and gas, general weakness, insomnia and constipation. Here follow the notes of his family physician, Dr. Green: "One night in October, 1924, he was seized with several general convulsions. In all, he had eight of these in intervals of about five minutes, and it took three-fourths grain (0.05 Gm.) of morphine and glycerin trinitrate to control them. Subsequently, there was considerable paresthesia of the right side with positive, but not great, paralysis of the left side of the face and inequality of pupils. All convulsions began on the right side. These symptoms, particularly the numbness, lasted for some time. Since the episode of convulsions there have been two or three attacks simulating a mild gallstone colic, with fever of a few hours' duration and jaundice for a few days." The foregoing notes accompanied the patient on his admission to a hospital in Philadelphia, Feb. 23, 1925.

Examination.—On arrival he appeared to be a very sick man; he was exhausted from his journey. He gave the impression of being highly toxic. He complained of pain in the upper right quadrant and epigastrium, abdominal distention with painful belching, and marked chilliness. His temperature ranged from 97 to 99 F. The leukocyte count was 10,100; polymorphonuclear neutrophils were 77 per cent. He was moderately jaundiced, his pulse was irregular with numerous skipped beats; the rate was 94. Peripheral arteries were considerably sclerotic. Systolic blood pressure was from 152 to 160; diastolic, 100. The left ventricle of the heart was moderately enlarged; action was overforcible; the aortic second sound was accentuated; there were numerous extrasystoles; cardiac sounds were heard through a wide area, front and back. The abdomen was distended, with moderate rigidity and spasm over the upper right rectus. The liver was not palpable; the percussion area of dulness was diminished and was sensitive to concussion. The spleen was not palpable. A persistent fistula discharging grayish pus in the lower right part of the abdomen was noted. It had required dressing twice a day since the previous August.

The right pupil was larger than the left; the left side of the mouth drooped; there were areas of anesthesia and paresthesia in the right arm and leg (adjudged as evidence of subsiding mild cerebral hemorrhage), extensive pyorrhea, and five capped teeth. Roentgen examination showed three apical abscesses. The tonsils were diseased; pus could be pressed out of the left tonsil.

Bacteriologic observations were as follows: Cultures from the gums and tonsils yielded Staphylococcus aureus, nonhemolytic streptococcus; from the bile drainage, B. typhosus, Staphylococcus aureus; from the abdominal sinus, B. typhosus, Staphylococcus albus; from the feces, B. typhosus, B. coli;

1. A more complete review of the subject appeared in the Journal of the Medical Society of New Jersey **28**: 799 (Nov.) 1931.

from the urine, B. coli and Staphylococcus albus, with no B. typhosus.

Urinalysis revealed no albumin, dextrose or ketones, and no fixation of specific gravity; there were occasional hyaline casts. Renal function was reduced to 12.5 per cent the first hour and 7.5 per cent the second hour on intramuscular injection of phenolsulphonphthalein. The twenty-four hour urine output was 500 cc.

The diagnosis was typhoid hepatocholangeitis; myocarditis; arteriosclerosis; toxic vs. interstitial nephritis; subsiding hemiplegia, and persistent abdominal sinus.

Treatment and Course.—General supportive treatment of the heart and kidneys was instituted; the protein diet was reduced; biliary drainage was given, and subsequently a combined polyvalent vaccine: B. typhosus from bile, sinus and feces; Staphylococcus aureus from the gums; nonhemolytic streptococcus from dental apical abscesses and tonsils.

Fifteen three-hour biliary drainages were given between February 25 and March 31, yielding 4,205 cc. of bile mixture weighing 3,936 Gm. (8⅕ pounds).

Four periods of "continuous plan" drainage between April 1 and 12 were given, yielding 10,235 cc. weighing 11,230 Gm. (23⅜ pounds). The pain was controlled after the first two drainages. Jaundice cleared, March 7, after five drainages. On March 14 the question of using mercurochrome-220 soluble intravenously as a magna sterilisans procedure was considered and declined because of depreciated kidney function. Had it been used, the interpretation of the successful results would have been complicated.

These liver drainages, yielding 3½ gallons (14 liters) in about six weeks, thinned out the bile from a very viscid, turbid, heavy sediment, multiple floccule type, microscopically rich in pus cells, inflammatory detritus and many colonies of bacteria, to a much clearer bile of thinner consistency and constantly diminishing floccules. Quantitative colony counts for B. typhosus were steadily reduced, although still positive in bile and feces, but negative in sinus cultures on the patient's discharge from the hospital, April 24.

The immediate response to treatment was quite spectacular. This very sick man stood the drainages very well; he was first out of bed on the fifteenth day; he lunched at a hotel on the twenty-fifth day. There was rapid subsidence of the toxic picture; the cardiorenal function improved with corresponding improvement in the blood, on chemical examination. Nonprotein nitrogen dropped from 50 mg. to 25.2; urea nitrogen from 20 mg. to 11.1; uric acid from 4.16 mg. to 2.91; dextrose and creatinine practically unchanged, from 149 mg. to 148, and from 1.88 mg. to 1.87, respectively.

From then on the progress of this case was tedious but progressively good. Under the supervision of his family physician and a technical nurse he continued biliary drainages throughout the summer of 1925 at intervals of from four to seven or ten days and an overnight drainage occasionally.

He returned to Philadelphia for a first recheck, October 6 to 14. Cultures from bile, feces and sinus were made each day for three days and twice more on alternate days, and B. typhosus was not found. He was advised to have the abdominal sinus surgically repaired, but he persistently declined. On his return to Troy additional cultures were made by the New York State Board of Health and were negative for typhoid, and the patient was released as a "carrier."

Over the next two years recultures were made a number of times, both in Troy and in Philadelphia, and were negative for B. typhosus. He had gained from 153 to 177 pounds.

Throughout 1926 and 1927 he took a short morning or an overnight drainage about once a month. The abdominal sinus, although yielding no growth to cultures, would not close. He was again advised to have it closed.

On Jan. 17, 1927, he writes: "On January 4, Dr. ——— probed the sinus; a few threads were exposed, and caught in forceps; the doctor gradually pulled out a roll of gauze about 4 inches long and seven-eighths inch in diameter. The wound drained slightly for about ten days and is now all healed. I thought you would like to have this for your records."

Final Results.—The patient has been followed up by letter twice a year. He last reports, Sept. 26, 1931, as follows: "Your letter of the 25th was received this morning. I am glad to report that my digestive apparatus is in good order. I have not had an ache or a pain since I first left your hospital. I go shooting nearly every day in the fall and winter and trout fishing equally as much in the spring and summer. The examining surgeons have twice refused me an increase of government pension, saying that I am in very good shape considering my 58 years of age. For the past two years I have not been on any diet nor taken extra care of myself, but it does not seem to make any difference. It is over three years since I have had a biliary drainage."

2031 Locust Street.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PULICATION OF THE FOLLOWING REPORT.

H. A. CARTER, Secretary.

DeVILBISS ATOMIZERS, POWDER BLOWERS AND VAPORIZERS ACCEPTABLE

The DeVilbiss Company, Toledo, Ohio, manufactures atomizers, powder blowers and vaporizers (nebulizers) for medicinal use. The twenty-eight products herein mentioned appear to be of good construction and the claims made for them meet the requirements of the Council.

DeVilbiss atomizers are recommended by the firm for applying a spray of medicinal agents to tissues in liquid form. The specifications of fifteen atomizers follow:

DEVILBISS ATOMIZER No. 12.—Spraying parts made of hard metal, nickel plated and polished. One piece, adjustable gold plated tip. One drachm bottle. Detachable nasal guard. Glass outlet tube. Taper connection between bulb and atomizer, permitting instant detachment. Vacuum plan construction.

DEVILBISS ATOMIZER No. 14.—Spraying parts made of hard metal, nickel plated and polished. Detachable nasal guard. Glass outlet tube. One drachm bottle. Especially constructed for spraying ephedrine and similar oil solutions. Compression type construction.

DEVILBISS ATOMIZER No. 15.—Spraying parts made of hard metal, nickel plated and polished. One piece, adjustable gold plated tip. Detachable nasal guard. Glass outlet tube. Taper connection between bulb and atomizer, permitting instant detachment. Vacuum plan construction.

DeVilbiss atomizer No. 15

DEVILBISS ATOMIZER No. 16.—Spraying parts made of hard metal, nickel plated and polished. One piece, adjustable gold plated tip. Detachable nasal guard. Glass outlet tube. Extra amber bottle with stopper. Taper connection between bulb and atomizer, permitting instant detachment. Vacuum plan construction.

DEVILBISS ATOMIZER No. 18.—Spraying parts made of hard metal, nickel plated and polished. One piece, adjustable gold plated tip. Closure valve on head directly over the bottle makes a nonspillable outfit for travelers' use. Detachable nasal guard. Glass outlet tube. Taper connection between bulb and atomizer, permitting instant detachment. Vacuum plan construction.

DEVILBISS ATOMIZER No. 28.—Spraying parts made of hard metal, nickel plated and polished. Inner tube easily removed for cleaning. Detachable nasal guard. Glass outlet tube. Taper connection between bulb and atomizer permitting instant detachment. Vacuum plan construction.

DEVILBISS ATOMIZER No. 30.—Spraying parts made of hard metal, nickel plated and polished. Glass outlet tube. Constructed on vacuum principle and anatomically correct for nasal use.

DEVILBISS ATOMIZER No. 150.—Spraying parts made of hard metal, chromium plated and polished. Inner tube easily removed for cleaning. Glass outlet tube. Vacuum plan construction.

DEVILBISS ATOMIZER No. 152.—Spraying parts made of hard metal, chromium plated and polished. One piece, adjustable gold plated tip. Glass outlet tube. Vacuum plan construction.

DEVILBISS ATOMIZER No. 154.—Spraying parts made of hard metal, chromium plated and polished. Spray tube easily detached for sterilizing. One piece, adjustable gold plated tip. Glass outlet tube. Vacuum plan construction.

DEVILBISS ATOMIZER No. 155.—Exterior of atomizer chromium plated and polished. Inside of bowl gold plated. One piece, adjustable gold plated tip. Small container for individual doses. Detachable nasal guard. Vacuum plan construction.

DEVILBISS ATOMIZER No. 156.—Spraying parts made of hard metal, chromium plated and polished. Interchangeable spray tips; postnasal tube, four-way tip and one-way tip. Glass outlet tube. Constructed on compression principle.

DEVILBISS ATOMIZER No. 158.—Spraying parts made of hard metal, chromium plated and polished. Glass outlet tube. Constructed on compression principle. Especially for ephedrine and similar oil solutions.

DEVILBISS ATOMIZER No. 159.—Spraying parts made of hard metal, chromium plated and polished. One piece, adjustable gold plated tip. Cutoff button on top of spray head for stopping spray instantaneously and substituting a flow of air. Glass outlet tube. Vacuum plan construction.

DEVILBISS ATOMIZER No. 251.—Spraying parts made of hard rubber. Detachable nasal guard. Hard rubber outlet tube. Inner tube easily removed for cleaning. Taper connection between bulb and atomizer, permitting instant detachment. Vacuum construction.

DeVilbiss vaporizers (nebulizers), the firm claims, are used to create a vapor for inhalation of medicinal agents in an oil base.

DEVILBISS VAPORIZER No. 41.—Constructed to produce a vapor only from oil solutions. Spraying parts made of hard metal, nickel plated and polished. Detachable nasal guard. Glass outlet tube. Taper connection between bulb and vaporizer, permitting instant detachment.

DEVILBISS ELECTRIC VAPORIZER No. 47.—Constructed for applying warmed medication in the form either of solutions or of vapor ointments. Consists of a black case with electric plug and top made of hard metal, nickel plated and polished. Detachable nasal guard. Taper connection between bulb and vaporizer, permitting instant detachment.

DEVILBISS VAPORIZER No. 48.—Constructed to produce a large volume of extra dry vapor from oil solutions. Spraying parts made of hard metal, chromium plated and polished. Detachable nasal guard. Glass outlet tube. Taper connection between bulb and vaporizer, permitting instant detachment.

DEVILBISS VAPORIZER No. 49.—Constructed to produce a vapor only from oil solutions. Spraying parts made of hard metal, nickel plated and polished. Detachable nasal guard. Glass outlet tube. Metal table inside bottle for regulating density of vapor. Taper connection between bulb and vaporizer, permitting instant detachment.

DEVILBISS VAPORIZER No. 180.—Constructed to produce a vapor only from oil solutions. Spraying parts made of hard metal, chromium plated and polished. Detachable nasal guard. Glass outlet tube. Metal table inside bottle for regulating density of vapor.

DEVILBISS VAPORIZER No. 181.—Constructed to produce a large volume of extra dry vapor from oil solutions. Spraying parts made of hard metal, chromium plated and polished. Detachable nasal guard. Glass outlet tube.

DeVilbiss powder blowers, it is claimed, are used to apply a medicament in powdered form.

DEVILBISS POWDER BLOWER No. 36.—Spraying parts made of hard metal, nickel plated and polished. Adjustable tip. Glass outlet tube. Taper connection between bulb and atomizer, permitting instant detachment. Compression plan construction.

DEVILBISS POWDER BLOWER No. 175.—Spraying parts made of hard metal, chromium plated and polished. Single metal outlet tube stops clogging. Compression plan construction.

The following specialized instruments have been investigated:

DEVILBISS ELECTRIC STEAM VAPORIZER No. 42.—Constructed to produce a warm medicated vapor. Cover spout, medicine chamber and heating element housing made of bakelite. Glass jar. Electric cord with plugs. Carbon electrodes provide heating device. Especially constructed to insure perfect medication of vapor and eliminate any possibility of throwing drops of the solution. Current automatically cuts off when water is evaporated.

DEVILBISS WAX SPRAYER No. 110.—Constructed for heating and spraying waxlike substances on burns. Container and top made of hard metal, nickel plated and polished. Water jacket and preparation container in one piece. Taper connection between bulb and sprayer, permitting instant detachment.

DEVILBISS WAX SPRAYER No. 113.—Single container outfit for spraying waxlike substances on burns. Container and top made of hard metal, nickel plated and polished. Taper connection between bulb and sprayer, permitting instant detachment.

DEVILBISS SYRINGE No. 157.—Constructed for producing a stream and designed primarily for washing the middle ear. Spraying parts made of hard metal, chromium plated and polished. Glass outlet tube. Spray tip is detachable, making it possible to use other tips that are available.

DEVILBISS IRRIGATOR No. 190.—Constructed to produce a fine stream in treating eyes. Spraying parts made of hard metal, chromium plated and polished. Graduated scale on bottle. Bulb attached directly on to bottle, making a compact outfit.

The DeVilbiss Company makes no therapeutic claims for the instruments alone. It is claimed, however, that the aforementioned instruments will apply medicaments in liquid or powder form in a proper manner and in accordance with the wishes of the physician prescribing their use.

The Council on Physical Therapy accepts the aforementioned atomizers, powder blowers and vaporizers (nebulizers) for inclusion in its list of accepted devices for physical therapy.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

DECHOLIN.—Dehydrocholic Acid.—An oxidation product of cholic acid derived from natural bile acids.

Actions and Uses.—(See Bile Salts and Bile Salt Compounds, New and Nonofficial Remedies, 1931, p. 92). Decholin is proposed for use in functional insufficiency of the liver; to outline the bile ducts at operation and in relieving the possible occurrence of some of the postoperative symptoms; in cholecystography, to accelerate the appearance of the gallbladder shadow and to hasten removal of residual tetraiodophenolphthalein from the biliary apparatus; in cardiac decompensation with hepatic congestions, cirrhosis of the liver and similar disturbances of hepatic function with ascites.

Dosage.—From 0.25 to 0.5 Gm. (4 to 8 grains) two to three times daily after meals for a period of four to six weeks.

Manufactured by J. D. Riedel-E. de Haen, A. G. Berlin, Germany (Riedel-de Haen, Inc., New York, distributor). No U. S. patent. U. S. trademark 266,217.

Decholin Tablets, 3¼ grains.

Decholin occurs as a fine, colorless, crystalline powder with a bitter taste; sparingly soluble in alcohol and glacial acetic acid. It melts at 233-235 C.

Boil about 1 Gm. of decholin with 100 cc. of water for two minutes; no odor develops; cool and filter: Separate portions of 10 cc. each of the filtrate yield no opalescence with 1 cc. of diluted nitric acid and 1 cc. of silver nitrate solution (*chloride*); no turbidity with 1 cc. of diluted nitric acid and 1 cc. of barium nitrate solution (*sulphate*); no turbidity with 1 cc. of diluted sulphuric acid (*soluble barium compounds*); no coloration or precipitation on saturation with hydrogen sulphide (*salts of heavy metals*).

Dry about 1 Gm. of decholin, accurately weighed, at 100 C.: The loss in weight does not exceed 1.5 per cent. Incinerate about 1 Gm. of decholin, accurately weighed: The residue does not exceed 0.1 per cent. Dissolve about 0.5 Gm., accurately weighed, in 40 cc. of previously neutralized alcohol, dilute with about one-half the volume of water and titrate with tenth-normal sodium hydroxide solution using phenolphthalein as an indicator: The amount of tenth-normal sodium hydroxide solution consumed corresponds to not less than 98.5 per cent nor more than 101.5 per cent.

DECHOLIN SODIUM.—Sodium Dehydrocholate.—The sodium salt of dehydrocholic acid.

Actions and Uses.—(See Bile Salts and Bile Salt Compounds, New and Nonofficial Remedies, 1931, p. 92). The actions and uses of decholin-sodium are the same as those of decholin.

Dosage.—Decholin-sodium is administered intravenously. One injection is given on each of three successive days. According to the urgency of the case, the first dose consists of from 5 to 10 cc. of the 20 per cent solution; the second and third, of 10 cc. The 5 per cent solution may be used at the beginning or the end of the treatment or when a less intensive effect is desired.

Manufactured by J. D. Riedel-E. de Haen, A. G. Berlin, Germany. (Riedel-de Haen, Inc., New York, distributor). No U. S. patent. U. S. trademark 266,217.

Ampoules Solution Decholin-Sodium, 5 per cent, 10 cc.
Ampoules Solution Decholin-Sodium, 20 per cent, 10 cc.

Decholin-sodium occurs as a fine, colorless, crystalline powder with a very bitter taste, soluble in water and alcohol. An aqueous solution is alkaline to litmus.

Dissolve about 1 Gm. of decholin-sodium in 200 cc. of water; add an excess of hydrochloric acid; collect the resultant dehydrocholic acid on a filter, wash, and recrystallize from 80 per cent acetic acid; it melts at 233-238 C.

Dissolve about 0.5 Gm. of decholin-sodium in 100 cc. of water, acidify with hydrochloric acid and filter: Separate portions of 10 cc. each of the filtrate yield no turbidity with 1 cc. of barium chloride solution (*sulphate*); no coloration or precipitation on saturation with hydrogen sulphide (*salts of heavy metals*).

Dry about 1 Gm. of decholin-sodium, accurately weighed, to constant weight at 100 C.: The loss in weight does not exceed 7 per cent. Weigh accurately about 1 Gm. in a tared platinum crucible, add 2 cc. of sulphuric acid, gently heat while fumes of sulphur trioxide are evolved, repeat, using two portions of 1 cc. of sulphuric acid, respectively, ignite, cool and weigh as sodium sulphate: The percentage of sodium corresponds to not less than 5.3 per cent, nor more than 5.6 per cent, when calculated to the dried substance.

TUBERCULIN DENYS (See New and Nonofficial Remedies, 1931, p. 369).

The Cutter Laboratory, Berkeley, Calif.

Tuberculin B. F. (Bovine).—A tuberculin Denys prepared with bovine cultures of Bacterium tuberculosis; preserved with cresol; for use in dilutions only. Marketed in 1 cc. vials; also in serial dilutions.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

CALIFORNIA FRUIT GROWERS EXCHANGE ADVERTISING FOR SUNKIST ORANGES, LEMONS AND GRAPEFRUIT

Sponsors.—California Fruit Growers Exchange, Los Angeles.

This exchange is a cooperative marketing organization owned and operated by 13,000 citrus fruit growers. The exchange sells the fruit for the growers to the fruit trade.

Description.—"Sunkist" brand fresh mature oranges, grapefruit and lemons which pass the exchange standards for maturity, appearance and eating quality. Frost damaged fruit is excluded.

Harvesting, Shipment and Distribution.—

Oranges: Approximately 60 per cent of all oranges and 85 per cent of all lemons consumed in the United States and Canada are grown in California. The navel and Valencia are the two chief varieties of oranges. The navel orange ripens in the fall and winter and is packed and shipped from November to May. This orange has a "navel" formation at the end opposite the stem and is seedless. The Valencia orange ripens from April until November. This orange is almost seedless. The harvesting of oranges in California therefore proceeds throughout the year and fresh fruit is always available on the market. The other varieties of oranges, Mediterranean sweets, bloods, St. Michaels, seedlings and tangerines are relatively unimportant.

More than 210,000 acres of California are planted with orange trees which are budded seedlings. The bud is from pedigree trees. The trees must be carefully nurtured and cared for.

"Sunkist" oranges are harvested at the time of maturity equal to or higher than that called for by state or federal requirements. Damaged fruit is not permissible under the "Sunkist" brand. A small percentage of the fruit is treated with ethylene gas at the beginning of the shipping period of some varieties to hasten exterior color development. Only fruit passing fixed requirements of maturity, appearance and all around satisfaction and dependability are packed as "Sunkist" oranges.

The oranges are clipped from the trees and carefully handled to prevent injuries in which decay spores may lodge and later attack the fruit. The fruit is carefully laid in boxes that have been dipped in antiseptic solution. All pickers wear gloves. The fruit is conveyed to packing houses, where it is allowed to stand for several days to permit evaporation of some moisture from the rind to make the skin less subject to injury; it is thoroughly washed in warm water to remove dust, rinsed with cold water and dried by air blast.

The oranges on endless canvas belts are graded into classes. The different grades are separated by sizing machines into groups of different sizes. The best oranges of the different sizes are classed as "Sunkist," which word is indelibly stamped on the skin of each orange. Usually from one half to two thirds of the fruit qualify for the "Sunkist" grade. The oranges are packed in the familiar orange crates and sold by size, 80, 100, 126, 150, 176, 200, 216, 252, 288 and 324 respectively to the box. The freight cars of oranges are refrigerated in summer and heated in winter.

Lemons: The lemon tree produces throughout the year. Some trees yield as high as 3,000 fruit. The buds, flowers and fruit are on the tree at the same time. California thus markets fresh lemons throughout the year. The two prominent varieties are the Lisbon and the Eureka. There are more than 45,000 acres of lemon planting in California.

The culture of the lemon tree is similar to that for the orange tree.

Lemons are picked according to size rather than by color, all grades of lemons being picked green. Picking crews pass through the groves each six weeks, carrying rings 2¼ to 2⅜ inches in diameter, which are slipped over the fruit. Lemons passing through the ring are left on the tree. Fruit not passing through the rings is picked by clipping and handled with great care, as described for oranges.

The green fruit is separated from the yellow at the packing house and placed in storage rooms to cure at 18 C. and a humidity of 85. The skin in curing gradually assumes a waxy yellow color. When ready for shipment the lemons are removed from storage, carefully graded for size, and packed 240, 270, 300, 360, 420, 442 and 490 to the box.

Grapefruit: There are more than 14,000 acres planted with grapefruit in California. The Marsh seedless is the principal fruit grown. Harvesting extends from November to the following August in the various districts. The grapefruit is handled and packed as described for the orange. In order to develop the flavor, the grapefruit is sometimes stored and cured before shipment as described for the lemon.

Analysis (submitted by the exchange).—

Oranges (Citrus sinensis)
Average proximate analysis, edible portion

	per cent
Moisture	85.7
Ash	0.6
Fat (ether extract)	0.0
Protein (N × 6.25)	0.6
Reducing sugars as invert	9.1
Crude fiber	0.6
Carbohydrates other than crude fiber (by difference)	12.5
Acids as citric	1.2

Lemons (Citrus limonia)
Average proximate analysis, edible portion

	per cent
Moisture	89.3
Ash	0.5
Fat (ether extract)	0.6
Protein (N × 6.25)	0.9
Reducing sugars as invert	2.2
Crude fiber	0.9
Carbohydrates other than crude fiber (by difference)	7.8
Acids as citric	5.1

Grapefruit (Citrus grandus)
Average proximate analysis, edible portion

	per cent
Moisture	87.7
Ash	0.4
Fat (ether extract)	0.2
Protein (N × 6.25)	0.5
Reducing sugars as invert	6.6
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	10.9
Acids as citric	2.2

Calories.—Approximately 0.6 per gram; 17 per ounce.

Vitamins.—Citrus fruits are a fair source of vitamin A, a good source of B and an excellent source of vitamin C.

Claims of Exchange.—Sunkist citrus fruits have a distinctive flavor and rich juice, contain minerals and carbohydrates which metabolically are antagonistic to acidosis of both the acid-ash and acetone type, and stimulate appetite. The vitamin C content is quite constant and according to some experimental evidence tends to arrest such tooth decay, gum troubles and pyorrhea as may be due to the deficiency of that vitamin. Fresh Sunkist fruits are available the year round.

SPAULDING'S SUNSHINE VITAMIN D BREAD

Manufacturers.—R. Z. Spaulding Co. (the holding company), Binghamton, N. Y.

R. Z. Spaulding Co., Elmira, N. Y.
Huddleston-Walton Co., Oneonta, N. Y.
Henry German Baking Co., Scranton, Pa.
Henry German Baking Co., Wilkes-Barre, Pa.
R. Z. Spaulding Co., Middletown, N. Y.
Hazelton Baking Co., Hazelton, Pa.
Merchants Baking Co., Shamokin, Pa.

Description.—A white bread prepared by the sponge dough method containing an added special nutrient vitamin D equivalent to the vitamin D of three teaspoonfuls of standard cod liver oil for each 24 ounces of baked bread (140 vitamin D units defined by the Council on Pharmacy and Chemistry, New and Nonofficial Remedies, 1931, page 414) and manufactured under license granted by the General Baking Company of New York.

Manufacture.—The sponge dough ingredients, patent flours of spring and winter wheats, water, yeast and a yeast food con-

taining calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, and malt syrup are mixed in a high speed mixer. The sponge dough is fermented for four hours, after which are added flour, water, sweetened condensed skim milk, salt, lard, sucrose, malt syrup and corn oil containing irradiated ergosterol to make the completed dough, which is cut into pieces of desired weight. The pieces are fermented for a short time, molded into loaf form, panned, further fermented, baked for from forty to forty-five minutes, cooled, and wrapped in wax-paper.

The factory, equipment and storage rooms for the materials used are kept in strictly sanitary condition.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	34.5
Ash	1.6
Fat	1.2
Protein (N × 6.25)	9.4
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	52.9

Calories.—2.6 per gram; 74 per ounce.

Vitamins.—The vitamin D (irradiated ergosterol) is incorporated in this bread under license granted by the General Baking Company of New York. A vegetable oil solution of vitamin D standardized by biologic tests is added to the bread dough in quantities guaranteed by the Pediatric Research Foundation of Toronto to be equivalent to 140 D units, or the vitamin D of three teaspoonfuls of standard cod liver oil for each 24 ounces of bread. The baked bread is continuously assayed by that foundation for verification. The D units are those defined by the Council on Pharmacy and Chemistry of the American Medical Association (New and Nonofficial Remedies, 1931, page 414).

Claims of Manufacturer.—This bread provides substantial amounts of vitamin D needed in normal nutrition.

HYGEIA PURE STRAINED SPINACH

Contains Vitamin D

Added Irradiated Ergosterol (mildly seasoned with salt)

Manufacturer.—Snider Packing Corporation, Rochester, N. Y.

Distributor.—Hygeia Nursing Bottle Company, Buffalo, N. Y.

Description.—Strained spinach retaining in large measure the mineral and vitamin content of the raw spinach used; with added vitamin D (irradiated ergosterol), 60 D units per fluidounce; packed in jars. The D units are those defined by the Council on Pharmacy and Chemistry of the American Medical Association (New and Nonofficial Remedies, 1931, p. 414). One fluidounce is equivalent in vitamin D to the D content of one teaspoonful of cod liver oil. Mildly seasoned with salt.

Manufacture.—Local farmers are contracted with for growing and delivering the spinach, which is purchased under U. S. government inspection grades. The sorted spinach is passed through a dry "riddler," which removes loose and dry foreign material, is washed in an eccentric type tank washer, is wilted by application of water at 70 C. followed by a "shot" of steam and filled into No. 10 cans, and salt solution is added. The filled cans are sealed and processed for fifteen minutes at 122 C.

The canned spinach is puréed by essentially the same procedure as described for the Strained Peas (THE JOURNAL, Feb. 13, 1932, p. 555). The processing of the final canned product is that described for the Strained Peas.

Irradiated ergosterol is incorporated in the spinach, as described for the Strained Peas.

Analysis (submitted by manufacturer).—

Specific gravity 20 C./20 C.	1.02
	per cent
Moisture	94.6
Total solids	5.4
Ash	1.5
Fat (ether extract)	0.3
Protein (N × 6.25)	1.7
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	1.5
Starch (acid hydrolysis method)	0.2
Calcium (Ca)	0.004
Iron (Fe)	0.0012
Phosphorus (P)	0.017

Calories.—0.2 per gram; 6 per ounce.

Vitamins and Claims of Manufacturer.—See these sections for Strained Peas.

CLAUSSEN'S BREAD

Manufacturer.—H. H. Claussen's Sons, Augusta, Ga.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, short patent flours of southwest and northwest wheats, water, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, are mixed in a high speed mixer. The sponge dough is fermented for from four to five hours, after which are added flour, water, salt, sucrose, lard and sweetened condensed whole milk to make the completed dough, which is cut into pieces of desired weight. The pieces are fermented for a short time, molded into loaf form, panned, further fermented, baked for from thirty to thirty-five minutes, cooled, and wrapped in wax-paper.

The factory, equipment and storage rooms are kept in strictly sanitary condition.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	37.6
Ash	1.6
Protein (N × 6.25)	8.9
Fat	3.0
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	48.6

Calories.—2.6 per gram; 74 per ounce.

Claims of Manufacturer.—A bread of good quality.

CLAUSSEN'S OLD-TIMEY BREAD

Manufacturer.—H. H. Claussen's Sons, Augusta, Ga.

Description.—A white bread made by the straight dough method.

Manufacture.—The dough ingredients, patent flour, water, cake flour, yeast, salt, sucrose, skim milk and lard, are mixed in a high speed mixer. The dough is fermented for two hours, molded into loaf form, panned, baked for from forty-five to sixty minutes, cooled, and wrapped in wax-paper. The factory, equipment and storage rooms for the materials used are kept in strictly sanitary condition.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	32.8
Ash	1.1
Protein (N × 6.25)	9.2
Fat	3.6
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	53.0

Calories.—2.8 per gram; 80 per ounce.

Claims of Manufacturers.—A bread of good quality.

REPORTS OF THE COMMITTEE

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

RAYMOND HERTWIG, Secretary.

"SWEET WHEAT BREAD" NOT ACCEPTABLE

The Vermont Baking Company, White River Junction, Vt., submitted to the Committee on Foods a white bread called "Sweet Wheat Bread." This bread is prepared by the sponge dough method from short patent flours of northwest and southwest wheats, water, malt syrup, a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, dry skim milk, salt, dextrose, lard and a partially hydrolyzed starch.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	37.5
Ash	1.6
Fat (ether extract)	2.7
Protein (N × 6.25)	9.2
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	48.8

Discussion of Name.—The name implies that this is a "sweetened bread" containing materially more sugar and sweeter of taste than the usual white breads, which is not true to fact; it is inapplicable to a bread of the stated composition and is misleading. The manufacturer is unwilling to accept the Committee's recommendation for correcting the trade name; therefore this bread cannot be listed among the Committee's accepted foods.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 12, 1932

NORMAN BAKER VERSUS THE AMERICAN MEDICAL ASSOCIATION

The jury in the case of Norman Baker versus the American Medical Association, trial of which was completed on Thursday, March 3, after some four weeks of court procedure, returned a verdict for the Association. The editorials to which Baker objected were published in THE JOURNAL, April 12 and 19, 1930, and in *Hygeia*, May, 1930. During the trial, attorneys for the Association, headed by Mr. C. M. Burke of Messrs. Loesch, Schofield, Loesch and Burke, introduced evidence, justifying the statements that had been made. With Mr. Burke were associated Mr. C. L. Harrell of the same firm and Mr. Charles M. Dutcher, Iowa City. In addition to depositions introduced in great number, expert testimony was given for the Association by Drs. Francis Carter Wood, Joseph C. Bloodgood, Burton T. Simpson, Albert C. Broders and Max Cutler. Many other physicians aided the Association in this case. As was anticipated, the case of Norman Baker included primarily depositions and testimony offered by patients who considered themselves cured of what they believed to be cancer, and statements by various other individuals who claimed special competence in the cancer field, most of these "experts" being the subjects of previous reports by the Bureau of Investigation. The detailed account of the trial will be made available by the Bureau of Investigation in THE JOURNAL next week.

In publishing its reports on charlatanism and quackery, the American Medical Association fulfils a duty to the medical profession and to the public. Through the radio station KTNT, no longer on the air, Baker reached vast numbers of people. Newspapers, educational authorities, officials of county and state medical societies and numerous physicians, particularly in Iowa, Illinois, Wisconsin and Minnesota, asked THE JOURNAL to aid in combating the type of information that Baker was disseminating. Evidence offered by Baker himself indicated that his income from his medical activities, beginning at $1,300 per month, rose to approximately $75,000 per month in the heydey of his efforts and was reduced to some $7,000 in January, 1932, following the publication of articles concerning these activities by THE JOURNAL and by *Hygeia*.

During the progress of the trial, many organs of public expression intimated a realization of the significance of this work of the American Medical Association. The editorial statement of the Columbus (Ohio) *Evening Dispatch* is typical:

> In the suit of Norman Baker, of Muscatine, Iowa, against the American Medical association, Mr. Baker asks for $500,000, on the ground that the association has been guilty of libel in its exposure of his cancer curing claims and methods.
>
> The brief accounts of the trial carried in the press dispatches do not indicate that Mr. Baker is likely to get his $500,000. They do indicate that what he objects to as a libel was in reality a public service of great value.
>
> A former partner of Baker in his business was called by him as an expert witness, last Friday. Federal Judge Norbye, however, insisted first on knowing what were his qualifications for testifying as an expert in the field of cancer cure, and what he found out, by a few well directed questions, was that the man's education had not passed beyond the eighth grade in the public schools and that his work up to the time when he began treating cancer patients had been that of a surveyor's assistant and a coal miner.
>
> Other "expert witnesses" called by Baker were of the same type, for the most part, and were of course not permitted to testify as experts. There are few worse evils in the field of the public health than "cancer doctors" of the Baker type.

The evidence brought forth arouses pity for the situation that can permit the poor, the sick and the ignorant to be exploited. Justification by the courts of the condemnation given by THE JOURNAL to such exploitation repays but in small measure those who have suffered. The only answer that charlatanism can make to the publication of facts is a suit for libel. In its efforts to protect the public, THE JOURNAL and the American Medical Association have been not rarely compelled to respond to such suits. Fortunately the Association is able to answer adequately. The appreciation of the medical profession and of the public is tendered to all those who have cooperated to bring to a successful issue the case of Norman Baker versus the American Medical Association.

THE REFORM OF FOOTBALL

Recently, at the end of a football season in which many lamentable fatalities and injuries were brought into national prominence, THE JOURNAL [1] protested against such an unnecessary menace to health and life. As football has had a greater incidence of fatalities and permanent injuries than that shown by any other sport, it was pointed out that the all-powerful rules committee ought to consider carefully what it could do to lessen the hazards of the game. The committee has recently issued [2] an official statement of the changes made in the code for the 1932 season and the reasons for them. On reading the details for the first time one may well recall the familiar aphorism that "confession is good for the soul."

1. Football Fatalities, editorial, J. A. M. A. **97:** 1802 (Dec. 12) 1931.
2. The full text of the statements, by E. H. Hall and W. S. Langford, appeared in the daily papers of February 16.

The survey on which the reform program was based included a study of 49 deaths and 1,346 injuries in colleges, high schools, athletic clubs and "sand-lot groups" last season. The direct causes of some of the fatal accidents are listed as follows: improper support from interference, 1; head-on tackle, 4; unnecessary roughness, 2; player relaxed before ball was dead, 2; tackling in practice, 2; poor physical condition of the player, 6; piling on, 2. The parts of the body injured include almost every region of the exterior, in addition to ill defined "internal injuries." These vague generalizations suffice to indicate the implied culpability of sport leaders who acquiesced in the continuance of such unwholesome conditions in the athletic field until change was made imperative by the growing volume of reproach directed against those who tolerated them.

It may be ungracious to refer flippantly to some of the proposed changes. They illustrate, however, the extent to which health hazards had been developed and tolerated. With respect to the change in equipment, we learn that hereafter hard and unyielding substances used in the construction of protective devices must be covered on the outside with padding at least three eighths of an inch thick. This sounds like one of the international agreements with respect to armor plate or the construction of army tanks or other implements of war. Frankly, it means that the protective devices have become so dangerous that the antagonist is entitled to some amelioration of the dangers to which he is exposed thereby. Again, players on the defense are forbidden to strike an opponent on the head, neck or face but may use the palm of the hands to ward off or push such an opponent in trying to get to the ball or the carrier. At least some effort is to be made to avert assaults that are not tolerated even in the prize ring.

One feature of the new rules is intended to "liberalize" them by allowing a man who has been taken out to return to the game in any subsequent period. There is now no excuse for a player to conceal a minor injury or exhaustion. He can leave the game and come back again later if his coach or trainer permits. From a medical standpoint the wisdom of this may be debatable. Minor injury as well as exhaustion calls for rest and recuperation rather than for further fatigue and possible aggravation of the harm done. It scarcely requires medical exhortation to remind coaches that unless players are "in the pink of perfection" they ought not to engage in athletic combats for which the continuous presence of a physician is now urged; for the survey experts freely admit that one of the most common sources of injury comes from allowing a player who has received a minor injury or is temporarily indisposed to remain in the game. Such a man is peculiarly susceptible to serious injuries that would otherwise be trivial.

The rules committee purposes to make definite recommendations to officials and coaches as to what they can do to reduce injuries still further and also to send a letter or recommendation to high schools and unorganized teams as to ways by which they may eliminate the number of serious injuries by better supervision and by prompt, intelligent attention to trivial or minor injuries. The importance of the employment of team physicians and of careful medical supervision is thoroughly appreciated. Sports writers have already heralded an expected "fifty per cent cut in football perils." Those experts who have sponsored the new rules believe that by the changes which have been made a great forward step has been taken, not only in checking the tendency toward increasing injuries but in making the game much safer than ever before. Of course, the committee adds, there will always be accidents and injuries in any game involving physical contact and speed; but the members of the committee believe that results will show that it has been possible to accomplish much by modification of the rules alone.

"SAVER OF MOTHERS"

In a glorious tribute to Ignaz Semmelweis, published in the March issue of the *Ladies' Home Journal*, Paul de Kruif, author of Microbe Hunters, again attacks members of the medical profession as responsible for unnecessary deaths from puerperal infection. Moreover, he repeats the claim, which Newsholme and others have shown to be unwarranted, that the death rate of mothers from puerperal infection in this country is higher than that of other civilized nations. Thus, he says: "Yet today in our country—with the exception of Chile and maybe one or two others—the death rate from child bed fever is higher than that of any civilized land."

The medical profession has rendered homage repeatedly to Semmelweis and Holmes and White and others whose names are associated with the development of the knowledge that strict asepsis will prevent the vast majority of cases of puerperal infection. It is rather sad, therefore, to have de Kruif argue that any considerable number of physicians do not know asepsis or that they are too busy to practice it. His cure for the situation is apparently to urge boycott for any physician in whose practice there occurs a death from puerperal infection. No doubt this would promptly bring about a boycott of every competent obstetrician, since even under the best of conditions with the most noted of authorities in charge, cases of puerperal infection do occur. Actual epidemics have developed in well established lying-in hospitals.

In his article de Kruif cites the statistics of the Lying-In Hospital in Chicago—where the maternity building is separate from gynecology—which indicate that 25,212 mothers were delivered, with one death from puerperal infection "caught in the hospital." Yet is there any actual evidence to indicate that every maternity hospital should be a separate building and

that mothers are not safe in hospitals in which the maternity wards are a part of a general hospital? Medicine knows that infection is preventable, but disease prevention is costly and the suggestion that every baby should be born in an isolated maternity hospital is utopian. As well believe in the "Brave New World" of Aldous Huxley and have all of them raised from eggs in glass jars. Physicians may prevent infection from without the body but there are cases of infection from within.

The prevention of puerperal infection will not be realized by boycotts of doctors in whose practice cases occur. At this time, obstetric care in the United States for the vast majority of women is as good as if not better than in the majority of civilized countries. Therefore, it is unfair to the medical profession of this country to make them the scapegoats for promotion of any campaign or for building interest in the eulogy of a departed scientist. The life of Semmelweis needed no such false emphasis to attract intelligent readers. The *Ladies' Home Journal*, with its vast circulation and with the appeal that it has for several million women, does much to promote sound health education in problems affecting women. It should be able to accomplish this task without exaggeration. It can do more by educating women in the necessity for prenatal care, in the nature of proper obstetrics and in scientific infant feeding than by breaking down their confidence in their physicians.

FLOW OF BILE INTO THE INTESTINE

The rôle of bile in digestion is of such importance that contributions to the knowledge of its secretion and the factors concerned with its flow into the duodenum merit attention. The recent study of Puestow [1] deserves consideration for the novel experimental technic employed as much as for the addition to the available information on the mechanism of passage of bile into the intestine. In a three-stage operation, on dogs, a gastrojejunostomy was performed and the portion of the duodenal wall containing the opening of the ductus choledochus was brought to the external surface of the body wall. Here the segment of duodenum was cut lengthwise and the edges were sutured to the surrounding skin. The pancreatic secretion passed unimpeded into the distal portion of the duodenum, which remained in normal connection with the jejunum. With this preparation it was possible to make direct visual observations not only on the flow of bile after feeding various diets but also on the patency of the orifice of the choledochus and the behavior of the duodenal mucosa thus removed from direct contact with food materials. There was no flow of bile from the choledochus during fasting when the gallbladder was intact. The orifice of the duct was usually closed and the exposed segment of duodenal mucosa remained inactive so far as peristaltic movements or secretion were concerned. Under these conditions, the pressure in the common duct was between 140 and 170 mm. of bile. It is concluded that the sphincter mechanism at the end of the choledochus in the duodenal wall is effective in regulating the flow of bile into the intestine. The response to food was characteristic. Frequently the smell of food stimulated the slow flow of bile; inevitably the ingestion of food was followed by the appearance of bile from the duct. After two or three minutes the initial flow ceased but from ten to thirty minutes later bile again appeared and continued to flow for several hours.

These observations are considered to be a support for the view that there is a psychic or reflex stimulus to the expulsion of bile into the intestine. The bile was extruded in "brief oozes and spurts" and appeared at times to be influenced by the muscular contractions of the duodenum, which became active after food was ingested, as well as by the respiratory movements. Apparently the various kinds of foods used showed little difference in their influence on the flow of bile and the activity of the duodenum. The bile was dark brown, with a high viscosity at first, but as the flow continued it became lighter in color and less viscid. In an effort to stimulate bile flow by a local effect on the papilla of Vater, solutions of sodium chloride, sodium bicarbonate, hydrochloric acid, and magnesium sulphate were applied. This procedure as well as mechanical stimulation had no effect. On the other hand, the pronounced cholagogic action of bile salts was demonstrated after intravenous injection.

Removal of the gallbladder, on the other hand, resulted in a constant flow of bile in fasting animals. Feeding had little influence on the flow except to increase the quantity to a slight degree. The bile was light in color and watery after feeding, in contrast to the dark, viscid fluid observed when the gallbladder was intact. The opening of the duct apparently was constantly patent and the pressure in the duct was only 10 to 20 mm. of bile. Removal of the gallbladder exerted no influence on the response of the exposed duodenal segment to food.

The difficulty of formulating a satisfactory description of the mechanism whereby the hepatic secretion is ordinarily transferred to the intestine has been due, in no small part, to the anatomic situation in the region of the gallbladder, choledochus, duodenum and pancreas. As a result, experimental observations have been largely of an indirect nature. It is of importance, therefore, that the direct observation of the flow of bile permitted by the experimental technic of the Rochester investigator has substantiated in large measure the results obtained by other means. Only through such varied paths of approach can there be attained assurance of the probable mechanism in the normal intact organism.

1. Puestow, C. B.: The Discharge of Bile into the Duodenum, Arch. Surg. **23**: 1013 (Dec.) 1931.

Current Comment

EFFECT OF DIGITALIS BODIES ON THE VOMITING REFLEX

A moderately toxic dose of digitalis bodies induces attacks of vomiting, which continue and become more intense as the dose is increased. The vomiting may stop for several hours and then recur after the drug has been discontinued. However, the vomiting may cease as the drug is continued and other toxic effects appear in the form of frequent premature contractions of the heart or bigeminal rhythm. An experimental study was undertaken by Gold, Travell and Kwit [1] to determine whether it was possible by repeated injections of digitalis bodies to abolish the emetic action of the drugs, while at the same time increasing the extent of the cardiac poisoning. They injected digitoxin, ouabain and tincture of digitalis intravenously in dogs, varying the size of the dose, taking electrocardiograms at intervals before and after the injections, and in other ways observing the effects of the drugs on the vomiting reflex. Their experiments proved that after repeated doses of the digitalis bodies the vomiting reflex may be depressed so that a dose previously effective in producing vomiting becomes ineffective; the cardiac poisoning, however, continues to increase with the repeated doses, so that finally a toxic rhythm without vomiting is induced. The experiments did not give direct evidence as to the exact seat of the depression of the vomiting reflex, but this action is believed to be due to a peripheral action on the cardiac nerve fibers. It cannot be said how often such conditions are duplicated in the clinical use of digitalis bodies; however, clinicians should be cautious in relying on nausea and vomiting as a measure of the degree of cardiac poisoning. The continued use of large doses of digitalis bodies may depress the vomiting reflex and at the same time increase the intensity of the cardiac poisoning. After an initial period of vomiting, the continued administration of these drugs might even cause death without further vomiting.

ECONOMY AND THE PUBLIC HEALTH

At the present time this country is witnessing retrenchment in almost every field of human activity. The new policies are in part enforced by the exigencies of the financial situation; in no small measure they represent a return to programs of sane expenditures where orgies of unnecessary outlay had previously prevailed. The movement for economy has begun to invade the domain of governmental activities in the states as well as in the federal bureaus. It is, of course, proper that they should lead the way back to the practice of living within our national means. There may be an unfortunate fallacy, however, in the attempt to apply the pruning shears to all branches of governmental function. This applies notably to the services concerned with the public health. It sometimes happens that in times of stress the health of our people tends to suffer more than it may during periods of opulence. Hardly any one would argue that either the nation or a state has ever been unduly extravagant in expenditures for governmental hygiene. In fact, the most effective agencies in this field are even now scarcely well developed. Public opinion has not yet thoroughly grasped the usefulness of conservation through public hygiene and the fact that its cost to the taxpayer is saved many times over by the prevention of disease and death. The gains made in the elimination or curbing of such diseases as typhoid, yellow fever, malaria, smallpox and diphtheria—of the records of which the American medical profession may well be proud—must not be lost through a policy of false economy at this time. Health authorities must be enabled to perform their duties in an efficient manner. The menace of contagion, of stream pollution, of insanitary milk and food supply, of unregulated quarantine in world-wide travel must not be added to the other hardships now confronting the nation. Pointing out that reduced budgets are already carrying curtailed appropriations for public health departments, the president of the American Public Health Association, Dr. Louis I. Dublin, reminds us that it has been one of the "marvels of the last two years" that unemployment, decreased wages and lowered economic conditions have not affected health conditions and mortality. If public health is in a sense a purchasable commodity, our people should recognize expenditure for it as a wise outlay.

1. Gold, Harry; Travell, Janet; and Kwit, Nathan: Depression of the Vomiting Reflex by the Digitalis Bodies, Am. Heart J. 7: 165 (Dec.) 1931.

Association News

THE NEW ORLEANS SESSION

Cruises to Cuba, the Canal Zone and Central America

Members of the American Medical Association and their families are offered special cruises after the annual session to Cuban and Central American ports. A steamer belonging to the great white fleet of the United Fruit Company will sail from New Orleans, Saturday, May 14, at 11 a. m., for Havana, Cuba, Cristobal, Canal Zone, and Tela, Honduras, or Barrios, Guatemala, returning to New Orleans, Friday, May 27, at 8 a. m.

This trip has been arranged especially in response to the demand for a short vacation cruise. The number that can be accommodated is limited to eighty and all members desiring to join the party should make known their reservation requirements at once, as space will be assigned in the order in which applications are received. The fare, covering all expenses, varies from $140 to $220 per person, according to accommodations selected. All tickets are subject to a $5 U. S. war tax. The fares include meals and first-class stateroom accommodations for the entire cruise, steamer chairs, and shore excursion programs at the tropical ports—briefly, all expenses except gratuities, laundry, beverages and other items of a purely personal nature.

For further information and reservations, one may address the United Fruit Company, 111 West Washington Street, Chicago.

The Standard Fruit and Steamship Company will also schedule a special ship for physicians, their wives and friends. The ship will leave New Orleans on Saturday, May 14, for a twelve day trip to Havana, the Panama Canal and Puerto Cabezas, the banana port of Nicaragua. The rates vary from $97.50 to $127.50 per person, covering steamer, berth and meals.

The steamer may be used as a hotel in Havana and Panama.

Several physicians have already booked. For further information address the Gardner-Coburn Tours, Bienville Hotel, New Orleans, or the Standard Fruit and Steamship Company, 224 Baronne Street, New Orleans.

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Monday from 12 noon to 12:05 p. m. over Station WBBM (770 kilocycles, or 389.4 meters) and other stations of the Columbia Broadcasting System, and on Wednesday and Friday from 2:25 to 2:30 p. m. over Station WBBM, Chicago.

The program for the week is as follows:

March 14. Safe Water for Rural Homes.
March 16. What Do You Know About That?
March 18. Milk, Poor or Pure.

There is also a fifteen minute health talk sponsored by the Association on Saturday from 11:15 to 11:30 a. m. over Station WBBM, Chicago.

The program for the week is as follows:

March 19. The Sign on Your House (continued).

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Society News.—Dr. Sidney C. Barrow, Shreveport, La., among others, addressed the Tri-County Medical Society (Union, Columbia and Ouachita counties) in El Dorado, January 19, on "Radium and X-Ray."——Dr. Francis E. Utley, Cabot, entertained the Lonoke County Medical Society, February 10, in celebration of his fifty-first birthday.——The Arkansas County Medical Society was addressed, January 12, by Drs. Kingsley W. Cosgrove, Little Rock, and Jasper E. Neighbors, Stuttgart, on headaches and keloids, respectively.——Dr. Nona B. Ellis, Wilson, addressed the Mississippi County Medical Society, January 12, on "Management of Lobar Pneumonia."——The sixty-first anniversary of the Phillips County Medical Society was observed, January 26, in Helena; this society is said to be the oldest county society in the state.——Dr. William H. Mock, Prairie Grove, addressed the Washington County Medical Society, Fayetteville, February 2, on "Extra-Uterine Pregnancy."——Dr. Ray M. Balyeat, Oklahoma City, addressed the Hot Springs Academy of Medicine, February 2, on recent advances in allergy.

DELAWARE

Health at Wilmington.—Telegraphic reports to the U. S. Department of Commerce from eighty-three cities with a total population of 36 million, for the week ended February 27, indicate that the highest mortality rate (32.9) appears for Wilmington, and the rate for the group of cities as a whole, 12.9. The mortality rate for Wilmington for the corresponding week last year was 13.7, and for the group of cities, 14. The annual rate for eighty-three cities for the eight weeks of 1932 was 12.1, as against a rate of 14.3 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits, or that they have large Negro populations, may tend to increase the death rate.

DISTRICT OF COLUMBIA

Personal.—Dr. Daniel K. Shute, clinical professor emeritus of ophthalmology, George Washington University Medical School, received the honorary degree of doctor of science, February 22, at the bicentennial convocation of the George Washington University. Other honorary degrees also were conferred.

GEORGIA

Personal.—Dr. Frank B. Easley, Dalton, has been appointed director of district health unit number 2, composed of Catoosa, Gordon, Murray and Whitfield counties.——Dr. James W. Clements, Subligna, observed his ninety-first birthday, February 13.

Society News.—The Georgia Public Health Association was addressed at its annual meeting in Atlanta, January 22-23, among others, by Drs. Thomas H. D. Griffitts, Albany, on "Malaria Control for the Future"; Carl E. Rice, Rolla, Mo., "Trachoma Control in Georgia," and Guy G. Lunsford, Millen, "Typhoid and Sanitation." Dr. Ovid H. Cheek, Dublin, was elected president.——At the meeting of the Georgia Medical Society (Chatham County), January 12, Drs. Michael J. Egan, Jr., spoke on "Carcinoma of the Colon"; James C. Metts, "Spinal Cord Tumor with Operation and Discovery," and Thomas P. Waring, "Double Uterus with Operation." All the speakers were from Savannah.——Among speakers at the meeting of the Twelfth District Medical Society, Hawkinsville, January 22, were Drs. Major F. Fowler, Atlanta, on "Office Treatment of Venereal Diseases," and Edward B. Claxton, Dublin, "Gunshot Wounds of the Abdomen."——Dr. Amos J. Ayers, Atlanta, addressed the Fulton County Medical Society, among others, February 18, on "Clinical Laboratory Aids to Diagnosis in General Medicine."

ILLINOIS

Health Promotion Week.—A proclamation has been issued by the governor designating the week beginning April 24 and the day, May 1, as Health Promotion Week and Child Health Day, respectively. The days of the weeks will be known as Health Sunday, April 24; Nutrition Day, April 25; Dental Health Day, April 26; Immunization Day, April 27; Parental Inventory Day, April 28; Screen and Garden Day, April 29, and April 30-May 1, Child Health Day. Sunday, May 1, is officially designated National Child Health Day by the President of the United States, but the activities will take place largely on Saturday.

Chicago

Hospital News.—The first unit of the new municipal home for open cases of tuberculosis was recently opened. It is reported that about 400 patients can be accommodated in the institution, for which a building formerly occupied by the Chicago and Cook County School for Boys is being utilized, although the new unit will house only fifty.——A department of neurosurgery was established, January 20, at Presbyterian Hospital. Dr. Adrien H. P. E. Verbrugghen, formerly of Rochester, Minn., is the head of the department.

Society News.—Dr. Eugene T. Leddy, Rochester, Minn., addressed the Chicago Roentgen Society, March 9, on "X-Ray Treatment of Inoperable Carcinoma of the Breast."——Among others, Drs. Henry B. Thomas and Fred W. Hark addressed the Chicago Tuberculosis Society, March 10, on diagnosis and treatment of tuberculous joints.——The Chicago Orthopedic Society was addressed, March 11, by Drs. Eric Oldberg and Carroll C. L. Birch on "Spinal Tumors—Spasmodic Torticollis" and "Hemophilia," respectively.——Dr. Mortimer Diamond, among others, will address the Chicago Pathological Society, March 14, on "Fetal Calcification of the Myocardium."——A symposium on the public defender comprised the program of the meeting of the Chicago Academy of Criminology, March 10.

Branch Cancer Society Reorganized.—In order better to carry out the national program, the Illinois Branch of the American Society for the Control of Cancer was reorganized at a meeting, February 16, attended by representatives of the medical and dental professions, medical and dental colleges of Chicago, city and state health departments, Chicago Association of Commerce, Visiting Nurse Association and social agencies. It is intended that all approved organizations active in cancer education and research in Chicago and Illinois shall be properly represented in this branch, the purpose of which is to standardize approved methods of education, and to prepare and conduct a program in cancer education and research. Dr. Gilbert Fitz-Patrick was reappointed chairman for Illinois. Dr. William A. Evans was appointed chairman of the reorganization committee. Clarence C. Little, Sc.D., director, American Society for the Control of Cancer, as guest of honor, discussed cancer education. One of the special features of the Illinois program is the preparation of a book of pictures on lesions of the skin and mouth before and after treatment. The legends are being prepared by Drs. William E. Petersen and Francis E. Senear.

INDIANA

Society News.—Dr. Irvin Abell, Louisville, Ky., will address the Indianapolis Medical Society, March 15, on "Consideration of Some Modern Surgical Problems"; the program, March 22, will be given by Drs. William F. Clevenger and Howard B. Mettel on "Pathologic Mastoid: Complications, Diagnosis, Management" and "Diagnosis and Treatment of Allergic Conditions and Chronic Infections of the Respiratory Tract in Children," respectively. The society will be addressed,

March 29, by Drs. Oscar N. Torian and Matthew Winters on "Anterior Poliomyelitis in Preparalytic Stage with Discussion of Treatment and Report of Seven Suspected Cases."

KANSAS

Undulant Fever.—Two cases of undulant fever, reported in Junction City recently, caused the city commissioners to rule that all dairymen selling milk in Junction City must have their cows tested for contagious abortion.

Society News.—William J. Burns, executive secretary, Wayne County Medical Society, Detroit, addressed the Shawnee County Medical Society, March 7, on "Modern Functions of the County Medical Society."——A motion picture on traumatic surgery was shown before the Labette County Medical Society, January 27.——The Miami County Medical Society was addressed in Paola, January 12, by Drs. George E. Knappenberger and John H. Ogilvie, Kansas City, Mo., on "Diagnosis and Treatment of Peptic Ulcer" and "Cystic Diseases of the Breast," respectively.——Dr. Robert Lee Hoffmann, Kansas City, addressed a joint meeting of the Mitchell County Medical Society and the Solomon Valley Medical Society, January 13, on "Significance of Blood in the Urine." Dr. Ray M. Balyeat, Oklahoma City, spoke on allergic diseases.——The Wyandotte County Medical Society was addressed, March 1, by Drs. Albert J. Rettenmaier on "Fibroid Tumors," and Fred E. Angle, agranulocytosis.——At a meeting sponsored by the Crawford County Medical Society, February 18, the speakers included Drs. Clinton K. Smith and A. Morris Ginsberg, Kansas City, Mo., on "Transurethral Prostatomy" and "Present Conception of the Heart in Exophthalmic Goiter," respectively.——The Sumner County Medical Society was addressed, February 18, by Dr. Paul C. Carson, Wichita, on "Forms of Encephalitis and Convulsions in Children"; Dr. George E. Cowles, Wichita, also spoke.——A joint meeting of the Wichita Dental Society and the Sedgwick County Medical Society will be addressed, March 15, by H. C. Holmes, D.D.S., and Edwin H. Terrill, Wichita, on "The Dentist of Today" and "Relation of Certain Vitamins and Minerals to Nutrition," respectively.

KENTUCKY

Bills Introduced.—S. 434 and H. 817 propose to make it unlawful for public school authorities to permit minor students to be subjected to either medical or physical examinations over the written objections of the person or persons having legal custody of such minors, if such objections are accompanied by written statements of licensed physicians certifying as to the students' physical condition and good health.

LOUISIANA

Hospital News.—The Mary J. Walker unit of the Greenwell Springs Sanatorium, Zachary, has recently been completed. The new building has a capacity of 100 beds and has been made possible through a bequest of the late Mrs. Mary J. Walker, Lake Province. The sanatorium is under the jurisdiction of the Louisiana State Tuberculosis Commission.

University News.—A three months' course in tropical medicine was begun, March 1, at the Tulane University of Louisiana School of Medicine, New Orleans, for public health officers, physicians who expect to practice in the tropics, and selected senior medical students.——Dr. Charles A. Bahn has been appointed professor of ophthalmology in the graduate department of the Louisiana State University Medical Center.

Institute on Tuberculosis.—A case finding institute on tuberculosis was held in New Orleans, February 17-18, by the Tuberculosis and Public Health Association of Louisiana in cooperation with the state board of health. The program included a demonstration of the technic of tuberculin testing and a study of x-ray plates, lectures and round table discussion. Among the speakers were Drs. Kendall Emerson, New York, William C. White, Washington, D. C., and Horton R. Casparis, Nashville, Tenn.

MASSACHUSETTS

Personal.—Dr. Augustus Thorndike, Jr., Boston, has been appointed surgeon in the department of hygiene, Harvard University Medical School; he will also direct the medical activities in athletics. Dr. Thorndike will succeed Dr. Thomas K. Richards, whose resignation will become effective in the fall.

Society News.—The New England Pediatric Society was addressed, February 26, by Drs. Lewis Webb Hill, Boston, on "The Eczema Problem," and James S. Plant, Newark, N. J., "Promise of Psychiatry."——"Certain Problems in Diseases of Women" was the subject of Dr. Henry T. Hutchins, Boston, before the Belmont Medical Society, February 26.——Dr. Howard Moore, Boston, addressed the New England Physical Therapy Society, February 17, on "Treatment of Shoulder Conditions by Physical Therapy."——At the meeting of the New England Roentgen Ray Society, February 19, Drs. George Levene, Norwood, and William D. Reid, Boston, spoke on "Anatomic and Functional Diagnosis of Heart Disease by Means of the Roentgen Ray."——Dr. Theodore C. Greene, Peiping, China, addressed the Boston Medical History Club, February 15, on "Ancient and Modern Practice of Medicine in China: Medical Experiences in City and Country," and Dr. Arthur B. Lyon, Boston, "Daniel Whistler and the First Treatise on Rickets, 1645."——"Medical Publicity by Organizations and Individual Physicians" was the general topic discussed by Drs. Morris Fishbein, Chicago, and Iago Galdston, New York, March 10, before the New England Medical Council at the Boston Medical Library.

MICHIGAN

University News.—A chair of internal medicine is to be established at the Detroit College of Medicine and Surgery by the will of Dr. James Cleland, Jr. The bequest to the college becomes effective after the death of Dr. Cleland's wife.

Personal.—Dr. Hugo Erichsen, Birmingham, observed his fiftieth anniversary in the practice of medicine, March 2.——George B. Darling, Detroit, has been appointed associate executive director of the W. K. Kellogg Foundation, effective February 15.——Dr. William Arkell Browne, Baltimore, has been appointed health officer of the recently organized Oceana-Lake-Newaygo health unit, with headquarters at White Cloud.

Detroit's Swimming Pools.—In 1931, 78.2 per cent of Detroit's swimming pools were free from bacteria, as compared with 1925 when only 27 per cent of the samples showed a zero bacterial count. In 98.9 per cent of the samples of swimming pool water taken during 1931, B. coli was not found. Ford Hospital pool heads the list of pools not showing organisms of the B. coli group for a period of more than two years; it has been free from these organisms for more than five years. The number of pools in operation in the city in 1931 was more than double the number maintained in 1925.

Child Welfare Conference.—The Detroit District Extension of the White House Conference for Child Care and Protection will be held in Detroit, March 18-19, with headquarters at the Statler Hotel. The purposes of the conference will be to disseminate information on medical service, public health and administration, and the education and training of the handicapped; to present Detroit's current efforts to meet the requirements of the Children's Charter, and to foresee whatever may be revealed as the next steps in this matter. Assisting in the conference will be the Wayne County Medical Society, the board of health, child care agencies, and the education department.

Courses in Hygiene and Public Health.—Special week-end public health institutes in connection with the summer session at the University of Michigan will begin June 24 and continue through July 30, the week-end of July 1 being excluded. All branches of interest to public health workers will be emphasized. The speakers included in the program are Dr. Iago Galdston, New York; Mr. C. C. Young, Lansing; Drs. Mazyck P. Ravenel, Columbia, Mo.; Clyde C. Slemons, Lansing; Eugene L. Bishop, Nashville, Tenn.; William W. Peter, New York; Henry F. Vaughan, Dr.P.H., Detroit, and Dr. William J. V. Deacon, Lansing. The fee is $3 for each week-end session or $15 for the complete course. The regular summer session courses will begin June 27 and continue through August 5. Subjects under these courses will include methods and materials in health education, public health law and administration, administration and organization in public health nursing, and mental hygiene. For further information address Nathan Sinai, Dr.P.H., acting director, division of hygiene and public health, University of Michigan, Ann Arbor.

Society News.—Dr. Irving W. Greene, Owosso, among others, addressed the Shiawassee County Medical Society, February 11, on "Diagnosis and Treatment of Diabetic Acidosis and Coma"; Dr. Reed W. Teed spoke on "Malnutrition of Infants."——The speakers before the Washtenaw County Medical Society, February 18, included Dr. Colin C. McRae, Ann Arbor, on "Experimental Observations on Appendiceal Obstructions."——At a meeting of the Ionia-Montcalm Medical Society, February 9, in Belding, Dr. Alexander M. Campbell, Grand Rapids, spoke on "Management of Certain Obstetrical Complications"; Dr. William J. Butler, Grand Rapids, "Intravenous Urography," and Phillipp Northrup, D.D.S., "Reflex Disturbances of Impacted Teeth."——The Calhoun County Medical Society was addressed, March 1, by Drs. Louis J.

Hirschman, Detroit, and Awra A. Hoyt, Battle Creek, on "Colonic Dysfunction versus Colitis" and "Diphtheria Immunization," respectively. —— The clubrooms and library of the Kent County Medical Society were recently opened with a dinner and housewarming. The new quarters are on the third floor of the Medical Arts Building in Grand Rapids. Among other speakers, Dr. Frederick C. Warnshuis gave a history of the society since 1902. —— Dr. Angus McLean, Detroit, addressed the West Side Physicians Association, February 18, on "Veterans' Medical Care."——John H. Muyskens, Sc.D., Ann Arbor, addressed a joint meeting of the Wayne County Medical Society and Grace Hospital, March 8, on "Speech Defects—Cause, Prevention and Correction."

MINNESOTA

Personal.—Dr. Hugh Cabot, Rochester, will address the Abernethian Society, St. Bartholomew's Hospital, London, England, April 14, on "Further Travels with the North American Indians." —— Dr. Joseph A. Roy was recently elected mayor of Red Lake Falls.

Violation of Basic Science Law.—Mitchell Jurdy, listed in the 1931 Minneapolis city directory as a naturopathic physician, pleaded guilty to practicing healing without a basic science certificate, February 19. Judge Reed of the district court, Minneapolis, sentenced Jurdy to one year in the city workhouse. The sentence was stayed for one year, pending the good behavior of the defendant and his compliance with the medical laws of the state. Jurdy treated a patient suffering with epilepsy, it was claimed. The father of the patient testified that they had met Jurdy at the "Riley Long Life Health Club," where Jurdy lectured. On the day of the sentence, Jurdy told a representative of the state board of medical examiners that he has severed all connections with the naturopathic organization.

NEW JERSEY

Bill Introduced. — S. 204 proposes to accord physicians treating persons injured in accidents, liens on any judgments or settlements obtained by the injured persons by reason of their injuries.

Society News.—Drs. Philip J. Lipsett and William G. Doran, New York, addressed the Hudson County Medical Society, Jersey City, March 1, on "Acute Intra-Abdominal Diseases and Their Treatment" and "Early Symptoms of Congenital Dislocation of the Hip Joint," respectively.——Drs. Arthur First, Philadelphia, and Arthur L. Stone, Camden, addressed the Camden County Medical Society, Camden, March 1, on "Newer Concepts of the Biologic Tests for Pregnancy" and "The Profession's Responsibility in Matters of Public Health," respectively. —— Dr. Grafton Tyler Brown, Washington, D. C., addressed the Atlantic County Medical Society, Atlantic City, March 11, on "Seasonal Hay Fever." ——Mr. F. Edward Whitehead, River Edge, has been appointed executive secretary of the Bergen County Medical Society, a newly created position. He began his work, March 1.——Drs. Morris Fishbein, Chicago, and Ira S. Wile, New York, addressed a joint meeting of the Bergen and Passaic county medical societies in Paterson, March 8, on "The Changing Nature of Medical Practice" and "Child Behavior as a Medical Problem," respectively.

NEW YORK

Bills Introduced.—S. 1217 and A. 1587, to amend the law authorizing county and city boards of health to provide facilities for the treatment of venereal diseases, propose (1) to appropriate $250 toward the cost of initial installation of each such clinic as may be established by law and (2) to authorize the payment by the state of one half of the annual cost of the maintenance and operation of each such clinic. S. 1283 and A. 1546 propose to accord liens to hospitals treating persons injured in accidents, on any judgments or settlements obtained by such persons by reason of their injuries. S. 1343 proposes to create a board of hair dressers and cosmetologists and to regulate the practice of hair dressing and cosmetology. S. 1469, to amend the workmen's compensation act, proposes apparently to omit that provision of the act permitting an injured employee or an insurance carrier to select physicians to be present at any physical examination of an employee ordered by the industrial board or by the industrial commissioner. S. 1470 and A. 1725, to amend the workmen's compensation act, propose to permit an injured employee to elect to be treated at his employer's expense in a charitable or municipal hospital. S. 1468 and A. 1726, to amend the workmen's compensation act, propose to define "charitable and municipal hospitals" as referred to in S. 1470 and A. 1725. A. 1729 proposes to create a board of dental technicians and to regulate the licensing of master dental technicians and the operation of dental laboratories. A. 1733 proposes to provide that all cosmetics be labeled to show that they are not injurious, the name of the compounders and the dates of compounding, and to require manufacturers of cosmetics to file with the state public health department certain statements as to their formulas.

New York City

Sixth Harvey Lecture.—Dr. Leslie T. Webster, Rockefeller Institute, will deliver the sixth Harvey Society Lecture at the New York Academy of Medicine, March 17, on "Experimental Epidemiology." Officers of the society recently elected are as follows: Drs. Alfred F. Hess, president; Haven Emerson, vice president; Thomas M. Rivers, treasurer, and Edgar Stillman, secretary.

Promotions at New York University.—Four members of the staff of New York University and Bellevue Hospital Medical College were promoted in February as follows:

Dr. Frank C. Combes, Jr., to assistant clinical professor of dermatology and syphilology.
Dr. Henry C. Falk to clinical professor of gynecology.
Dr. Onslow A. Gordon, Jr., to associate professor of gynecology.
Dr. Francis W. Sovak to clinical professor of gynecology.

Personal.—Dr. Max Einhorn was the guest of honor at a dinner celebrating his seventieth birthday, January 9, given at the Hotel Astor by the staffs of the Lenox Hill and Postgraduate hospitals and members of the German Medical Society and the International Medical Club of America.——Dr. William B. Coley, chief surgeon of the New York Central Railroad, retired, January 1, after thirty-five years of service and was succeeded by his son, Dr. Bradley L. Coley.

Society News.—Drs. Albert A. Epstein, William Barclay Parsons, Jr., and Charles Gordon Heyd addressed the Medical Society of the County of New York, February 29, on diseases of the thyroid gland.——Drs. George W. Crile, Cleveland, and Edwin A. Riesenfeld addressed the Harlem Medical Association, March 2, on "Factors Determining the End-Results of Surgical Treatment of Hyperthyroidism" and "Postural Treatment for Intracranial Hemorrhage in the New-Born," respectively.——Drs. Herman Goodman and Herbert S. Abel, among others, addressed the New York Physical Therapy Association, March 2, on "Hot and Cold Quartz Tubes: Reaction of the Skin in Health and Disease."——A special meeting of the New York Academy of Medicine under the auspices of its committee on public health relations and the Committee on Costs of Medical Care was held, March 9, with the following speakers: Drs. Richard M. Smith, Boston, "Outstanding Facts from the Studies of the Committee on Costs of Medical Care"; Allon Peebles, Ph.D., Washington, D. C., "Unevenness of Distribution of the Costs of Medical Care," and Dr. Nathan B. Van Etten, "Social and Economic Problems Facing the Medical Profession."

OHIO

Lectures on Otology.—Dr. Erich Ruttin, Vienna, Austria, will give a series of lectures and demonstrations in otology in Cincinnati, March 21-25. Those interested may receive further information from Dr. Harris H. Vail, 919 Carew Tower, Cincinnati.

Personal.—Dr. Charles H. Creed, head of the bureau of examination and classification at the Ohio State Penitentiary, Columbus, has been appointed superintendent of the Athens State Hospital to succeed the late Dr. John H. Berry.—— Drs. Ralph W. Staley, Ernest O. Swartz and Henry B. Freiberg were made assistant professors in the department of urology at the University of Cincinnati School of Medicine in February.

University News. — Dr. Esmond R. Long, professor of pathology, University of Chicago, delivered the annual lectures in pathology at the Ohio State University College of Medicine, February 26. The first lecture was given before the faculty and student body on "A Survey of the Origins of Modern Pathology" and the second to the faculty, the students and the medical profession of Columbus on "The Exudative Phenomena in Tuberculosis."

Society News.—Drs. Fred W. Rankin and Byrl R. Kirklin, Rochester, Minn., addressed the Toledo Academy of Medicine, February 5, on "Surgical Treatment of Cancer of the Colon," and "Roentgenologic Diagnosis of Malignant Lesions of the Colon," respectively. The academy held an all-day clinic at the Lucas County Hospital, March 4, with Dr. Pol N. Coryllos, New York, as guest demonstrator on operative technic in chest conditions. Dr. Coryllos addressed the general meeting of the academy on "Causes and Prevention of Cardiopulmonary Complications in Chest Surgery After Tuberculosis."——Dr. Mont

R. Reid, Cincinnati, addressed the Summit County Medical Society, Akron, March 1, on "Surgery of the Sympathetic Nervous System."——Dr. Herbert Fox, Philadelphia, addressed the Cincinnati Academy of Medicine, March 7, on "Arteriosclerosis: Its Causation and Significance According to Comparative Anatomy." The Cincinnati Oto-Laryngological Society will meet with the specialty section of the academy, March 28, to hear George Oscar Russell, Ph.D., Columbus, give an address on "New Light on Interior Laryngeal Function Through Sound Movies Thereof."——Dr. Vernon C. Rowland, Cleveland, addressed the Montgomery County Medical Society, Dayton, March 4, on "Differential Diagnosis of Chronic Colitis."

OKLAHOMA

Society News.—At a joint session of the Woods and Alfalfa county medical societies, Alva, January 26, speakers were Drs. Philip M. McNeill on "Nontuberculous Infections of the Lungs"; Henry H. Turner, "Interrelationship of Endocrinology and Neurology," and Horace Reed, "Differential Diagnosis of Acute Appendicitis." All speakers were from Oklahoma City.

OREGON

Society News.—Mr. Fred Ross, attorney, addressed the Portland City and County Medical Society, March 2, on "The Workmen's Compensation Act in Relation to the Medical Profession." At a joint meeting with the Portland District Dental Society, February 17, speakers were Drs. Homer P. Rush, on "Systemic Manifestations of Dental Focal Infection"; Ralph A. Fenton, "Manifestations of Dental Sepsis Relative to Eye, Ear, Nose and Throat," and Byron E. Loomis, D.D.S., "Oral and Dental Diagnosis."——The Portland Medical Hospital took possession of a new $100,000 building, January 13; the present capacity is seventy-five beds, to which it is planned to add twenty in the future.

PENNSYLVANIA

State Society's Essay Prize Awarded.—Dr. William A. Lell, intern at the Graduate Hospital, University of Pennsylvania, Philadelphia, received a prize of $100 in a contest sponsored by the Medical Society of the State of Pennsylvania for the best essay on "How to Diminish Deaths from Cancer in Pennsylvania." This contest was inaugurated early in 1931 and was open to any intern on duty in the state, Dec. 31, 1931. A similar contest was held for nurses with a prize of $50 offered for an essay on "How a Nurse Can Help Diminish Deaths from Cancer in Pennsylvania." The contests were the climax of several years' endeavor on the part of the society's commission on cancer to build up in the minds of those teaching young physicians and nurses in hospitals the value of their opportunity for impressing the need for early recognition of the signs of cancer. Dr. Lell's essay presented a plan for the establishment of six cancer clinics to be maintained by the commonwealth, where any person might obtain examination to learn whether he is suffering from the disease.

Philadelphia

Anniversary Meeting.—The Woman's Medical College of Pennsylvania held an open scientific meeting at the college building, March 11, marking the eighty-second anniversary of its founding. Dr. Edward B. Meigs, Washington, D. C., was the speaker of the evening on "The Nutritive Value of Milk."

Robert Koch Anniversary.—The section on medical history of the College of Physicians of Philadelphia will hold its stated meeting, March 14, in cooperation with the Henry Phipps Institute, the Philadelphia Health Council and Tuberculosis Committee and the Philadelphia Association of Tuberculosis Clinics to commemorate the fiftieth anniversary of the discovery by Robert Koch, March 24, 1882, of the tubercle bacillus. Addresses were made by Drs. Henry R. M. Landis, on "Reception of Koch's Announcement in the United States"; Theobald Smith, Princeton, N. J., "Koch's Views on the Stability of Species Among Bacteria"; Lawrason Brown, Saranac Lake, N. Y., "What Koch Meant to Tuberculosis," and Damaso de Rivas, "Personal Reminiscences of Robert Koch."

Society News.—Dr. Henry K. Pancoast addressed the Philadelphia Roentgen Ray Society, March 3, on "Roentgenological Studies of Tumors of the Gastro-Intestinal Tract."——Among speakers before the Obstetrical Society of Philadelphia, March 3, were Drs. Clifford B. Lull, who gave "A Preliminary Report on the Use of Barbiturates with Ether by Rectum," and Charles H. Frazier and Henry F. Ulrich, "Thyrotoxicosis Complicating Pregnancy."——Dr. Edward F. Corson, delivered the postgraduate seminar of the Philadelphia County Medical Society, March 4, on "Differential Diagnosis of Syphilitic and Nonsyphilitic Eruptions." Dr. Martin E. Rehfuss gave the lecture, March 11, on "Diagnosis and Treatment of Colon Infections."——Dr. Joseph C. Doane addressed the Philadelphia Medical Examiners' Association, March 7, on "Vascular Diseases of the Extremities and Their Relation to Insurance."——Drs. Robert H. Ivy and Lawrence Curtis addressed the Philadelphia Academy of Surgery, March 7, on "Salivary Duct Calculi," and Dr. Joseph L. Magrath, Upper Darby, on "Surgical Shock."——A symposium on sinusitis in children was held before a joint meeting of the Philadelphia Pediatric Society and Philadelphia Laryngological Society, March 8, with Drs. John D. Donnelly, Bala-Cynwyd, Herman B. Cohen, Willis F. Manges and Gabriel Tucker as participants.——Drs. Harvey M. Watkins, Polk; Mary M. Wolfe, Laurelton, and Robert A. Matthews presented a symposium on mental deficiency before the Philadelphia Psychiatric Society, March 11.——Dr. Seth A. Brumm was elected president of the Philadelphia Association of Tuberculosis Clinics at its meeting, February 24. Dr. David R. Lyman, Wallingford, Conn., addressed the society on the tuberculosis death rate as affected by the industrial depression.

SOUTH CAROLINA

Hospital Burned.—Fire recently destroyed completely the Majority Hospital for Negroes at Union. An effort is being made by both white and colored citizens to restore the hospital as soon as possible. Believing that physicians or hospitals in other parts of the country may have equipment for wards and operating room which may have been discarded for newer equipment, but is in good condition, those interested have requested donation of such material for the use of the hospital. Mr. Allan Nicholson, a newspaper editor of Union, is in charge of the movement to restore the hospital, and correspondence may be addressed to him.

TEXAS

Society News.—Drs. William M. Crawford and Walter B. West addressed the Tarrant County Medical Society, Fort Worth, February 2, on lymphosarcoma of the mediastinum and injuries to the head, respectively.——The Northwestern Texas District Medical Society met, March 8, in Dallas. Among the speakers announced were Drs. Joseph F. McVeigh and William S. Horn, Fort Worth, on "Malignant Endocarditis" and "Angina Pectoris Associated with Pernicious Anemia," respectively, and George M. Underwood and Arthur J. Schwenkenberg, Dallas, on "Diagnosis and Treatment of Jaundice" and "Nervous Breakdown Precipitated by Recent Economic Crisis," respectively.——Drs. Howard R. Dudgeon, Waco, and Marion M. Brown, Mexia, addressed the Navarro County Medical Society, Corsicana, January 4, on "Cancer of the Colon" and "Spinal Anesthesia," respectively.——Dr. Cleve C. Nash, Dallas, addressed the Harris County Medical Society, Houston, January 20, on diagnosis and treatment of brain tumors.——Drs. George Raworth Williams and James Shirley Sweeney addressed the Dallas County Medical Society, January 28, on "Kidney Pain" and "Pancreatitis and Diabetes Mellitus," respectively. A symposium on cancer was presented, March 10, by Drs. James M. Martin, John L. Goforth and Charles L. Martin.

UTAH

Annual Registration Due April 1.—All practitioners of medicine and surgery holding licenses in Utah are required to register annually on or before April 1, with the department of registration, and to pay a fee of $3. If a licentiate neglects to register within from ninety days to six months after April 1, his license can be revoked and will be reinstated thereafter only on his paying the delinquent registration fees and an additional year's fee as a penalty.

VIRGINIA

Bill Introduced.—H. 256 proposes to create a division of barber examiners in the state health department and to regulate the practice of barbering.

WISCONSIN

Board to Consider Reciprocity Applications.—The Wisconsin State Board of Medical Examiners will hold a special meeting, April 6, at the Hotel Schroeder, Milwaukee, to consider applications for licenses by reciprocity only.

Society News.—Drs. Campbell C. Edmondson, Waukesha, and Russell M. Kurten, Racine, addressed the Racine County Medical Society, January 21, on diabetes and "Physiology of the Sex Cycle," respectively. County Judge J. Allan Simpson spoke on "Admission of Patients to County Hospitals as County Charges."——Dr. Dallas B. Phemister, Chicago, addressed the Medical Society of Milwaukee County, February 12, on gall-

stones.——Dr. Owen H. Wangensteen, Minneapolis, made an address on "Diagnosis and Treatment of Acute Intestinal Obstruction" before the Milwaukee Academy of Medicine, February 16. —— Dr. Glenn J. Greenwood, Evanston, Ill., addressed the Outagamie County Medical Society, Appleton, February 23, on "Middle Ear Infections in Children."

WYOMING

Annual Registration Due April 1.—All practitioners of medicine and surgery licensed to practice in Wyoming are required by law to register on or before April 1, with the secretary of the board of medical examiners, and to pay a fee of $2.50. If a licentiate fails to pay the fee within three months after April 1, his license can be annulled, and if annulled it will be restored to him only on his paying the stated fee, plus $5 as a penalty.

GENERAL

Society News.—Dr. John F. D. Cook, Langford, S. D., was elected president of the Northwest Regional Medical Conference at the annual meeting in St. Paul, January 24, and Vernon D. Blank, Des Moines, was elected secretary. The states included in this group are Minnesota, Wyoming, Ohio, Illinois, Iowa, Wisconsin, Nebraska, North Dakota and South Dakota. —— Dr. Alexander B. Dancy, Jackson, Tenn., was named president-elect of the Mid-South Postgraduate Medical Assembly at its meeting in Memphis, February 11. Dr. Lowry H. McDaniel, Tyronza, Ark., became president. Memphis was selected as a permanent meeting place.——The Radiological Society of North America has set the date of its next meeting for November 28-December 2, in Atlantic City.

Annual Meeting of College of Physicians.—The sixteenth annual clinical session of the American College of Physicians will be held in San Francisco, April 4-8, with general headquarters at the Palace Hotel, and under the presidency of Dr. Solon Marx White, Minneapolis. This is the first meeting of the college to be held on the Pacific Coast, and it is planned to present through clinics and demonstrations the disease entities which are more or less peculiar to western America. To this group belong coccidioides, undulant fever, relapsing fever, Rocky Mountain spotted fever, tularemia, amebiasis, poisoning from spider bite, mussel poisoning and botulism. Programs have been arranged for those interested in the fields of cardiovascular, gastro-intestinal, endocrine diseases and diseases of the hematopoietic system. There will be symposiums on diseases of the kidney, tropical diseases and pulmonary diseases, and, two days during the session, clinicopathologic conferences will be held. Wednesday, April 6, there will be a symposium dealing with the "Medical History of Western America," including papers on medicine in Mexico, Peru, early California and in the Northwestern states, and plans for Friday call for a symposium on the "Anatomical Traditions of the Renaissance and Their Relation to the Modern Teaching of Anatomy." A symposium on "Ten Years' Experience with Insulin" will also be held. Various exhibits of rare medical prints and collections are being arranged. An extensive program of scientific papers will be presented by men prominent in their respective fields. The annual banquet of the college will be April 7. Dr. Arthur L. Bloomfield, San Francisco, will act as toastmaster, and Dr. Charles J. Singer of the University of London, London, England, will deliver an address on "A Great Country Doctor."

Medical Bills in Congress.—*Changes in Status:* S. 695 has been recommitted to the Senate Finance Committee. The bill, proposing a reduction in payments to veterans under the Disabled Emergency Retirement Act while they are being maintained in institutions by the Veterans' Administration, had previously been favorably reported to the Senate. S. 572, the Jones rural health, and maternity and child hygiene bill, has been ordered favorably reported, with amendment, by the Senate Commerce Committee, by a vote of 12 to 9. The proposed amendment strikes out all after the enacting clause and inserts in lieu thereof the provisions of a bill introduced by Senator Jones during the Seventy-First Congress, S. 255, providing for the promotion of the health and welfare of mothers and infants. S. 1975 has been favorably reported to the Senate, without amendment, to amend an act entitled "An Act to recognize the high public service rendered by Major Walter Reed and those associated with him in the discovery of the cause and means of transmission of yellow fever," by including Roger P. Ames among those honored by the act. H. R. 4577, proposing to extend hospital and home facilities to veterans of the Confederate Army and Navy, has been recommitted to the House Committee on Military Affairs. The bill had previously been favorably reported to the House. *Bills Introduced:* S. 3769, by Senator King, Utah, to amend the Disabled Emergency Officers' Retirement Act by requiring beneficiaries to have served six months or more as members of the military or naval establishments, between April 6, 1917, and Nov. 11, 1918, and by requiring that the disability for which retirement is sought shall have been incurred as a result of war service between April 6, 1917, and Nov. 11, 1918. S. 3849, by Senator Trammell, Florida, and H. R. 9969, by Representative Green, Florida, to erect a 200 bed addition to the veterans' hospital, Lake City, Fla. S. 3853, by Senator Bingham, Connecticut, to regulate interstate and foreign commerce in poisonous volatile substances intended for household consumption. S. 3865, by Senator Bulkley, Ohio, to provide treatment in marine hospitals for persons belonging to the Steamboat Inspection Service whose chief duties are inspection of vessels. S. 3884, by Senator Capper, Kansas, to provide for the further development of vocational education in the several states and territories. H. R. 9450, by Representative Johnson, Oklahoma, to provide additional compensation for veterans entering service prior to Nov. 11, 1918, who suffered the loss of the "use of a creative organ or one or more feet or hands as the result of personal injury received or disease contracted in active service in line of duty after April 6, 1917, and before discharge from such service." H. R. 9485, by Representative Harlan, Ohio, to authorize construction at the Veterans' Administration Home, Dayton, Ohio. H. R. 9838, by Representative Hess, Ohio, to construct a veterans' hospital and regional office in Cincinnati. H. R. 9890, by Representative Thatcher, Kentucky, to construct a hospital at Fort Knox, Kentucky. H. R. 10042, by Representative Connery, Massachusetts, to recognize the high public service rendered by soldiers who volunteered and served in trench fever experiments in the American Expeditionary Forces. H. R. 10052, by Representative Seiberling, Ohio, to provide for federal cooperation with the several states and territories in the physical restoration, education, vocational guidance and vocational education of "any person below the age of twenty-one years who by reason of physical defects or infirmities, whether congenital or acquired by accident, injury, or disease, are or may be expected to be totally or partially incapacitated for participation in the educational and vocational activities expected of a normal person."

PHILIPPINE ISLANDS

Campaign for Eyesight Conservation.—An active campaign for the correction of eye defects and conservation of vision was recommended to the house of delegates of the Philippine Islands Medical Association in December by a committee on conservation of vision created by the house in 1927. Statistics collected by the committee showed that blindness and defective vision are prevalent among Filipinos and that in many cases these handicaps could be prevented by proper care. In one study of about 1,800 cases of blindness, it was found that 27 per cent were caused by cataract and 25 per cent by physical injuries with subsequent infections and improper treatment. Of 7,996 industrial accidents reported to the labor office of the islands, 222 involved the eyes. It was said that the office recommended the use of goggles but that there is no law requiring it. The committee recommended, as features of its campaign, popular education, strict enforcement of regulations concerning communicable diseases, establishment of more eye clinics in the provinces, instruction of medical personnel and encouragement of all health agencies to take part in the campaign. Among other activities the committee has sponsored legislation to require physicians, nurses and midwives to use preventive measures against ophthalmia neonatorum, but this is still pending in the legislature. Dr. Antonio S. Fernando is chairman of the committee, and the members are Drs. Rafael Villafranca and Conrado D. Ayuyao.

CANADA

Personal.—Dr. Jabez Henry Elliott has been appointed professor of the history of medicine at the University of Toronto to succeed Dr. John T. Fotheringham, who retired in June, 1931. For the past six years Dr. Elliott has been a special lecturer in medicine at the university.——A scroll of recognition was recently presented to Dr. Velyien Ewart Henderson, professor of pharmacy and pharmacology, University of Toronto Faculty of Medicine, by the International Anesthesia Research Society in appreciation of his work in anesthesia.—— Dr. Rosario Fontaine has been appointed professor of medical jurisprudence and toxicology at the University of Montreal Faculty of Medicine to succeed the late Dr. G. Wilfrid Derome.

Saskatchewan Cancer Clinics.—Two clinics for the diagnosis and treatment of cancer have recently been opened in Saskatchewan, at the Regina General Hospital and the Saskatoon City Hospital, said to be the first of their kind in the dominion. This action is part of a concerted attack on cancer in the province, which began with the appointment of a cancer

commission in June, 1930, under authority of legislation passed in the previous session of the legislature. This commission was empowered to carry on a campaign of public education for control of cancer, to investigate the problem in the province, to establish diagnostic clinics and to buy radium to the amount of $115,000 (THE JOURNAL, April 11, 1930, p. 1332). Admittance to the clinics may be secured only through recommendation by a medical practitioner. A fee of $10 will be charged for the examination of a patient and other fees will be payable to the hospital for hospital service, to the commission for radiotherapy and to the surgeon for any surgical measures. Staffs will be made up of the chiefs of the various departments of the hospital services, it was announced.

Lectures at Toronto.—A series of lectures of special interest to the practitioner has been presented during the winter months by the Academy of Medicine of Toronto. Following are the speakers and their subjects:

Dr. Goldwin W. Howland, "The Pituitary as an Endocrine Gland."
Dr. Kenneth G. McKenzie, "The Pituitary as a Brain Tumor."
Dr. Alan G. Brown, "Practical Considerations of Disturbances of the Thyroid Glands in Infancy and Childhood."
Dr. Joseph A. Gilchrist, "The Challenge of the Pancreas."
Dr. Francis J. O'Leary, "Ovarian and Placental Therapy."
Dr. Ray F. Farquharson, "Treatment of Anemia and Associated Conditions by Liver and Extracts of Liver and Stomach."
Dr. Cecil O. Young, "Thyroid Gland: Medical Aspect; Hyperthyroid Conditions."
Dr. Andrew Almon Fletcher, "Hypothyroidism and Low Metabolic Rates."
Dr. Harold G. Armstrong, "Thyroid Gland; Surgical Aspect."

FOREIGN

Centenary of British Medical Association.—The centenary meeting of the British Medical Association will be held in London, beginning with the annual representative meeting, July 21. The annual general meeting will be held July 25, and the incoming president, Lord Dawson of Penn, will give his inaugural address, July 26. The scientific sessions will be held, July 27-29. The centenary dinner of the association will take place, July 28. There is to be a pilgrimage to Worcester on Sunday, July 24, to unveil memorials to Sir Charles Hastings, founder of the association (THE JOURNAL, Dec. 5, 1931, p. 1718). Dr. William George Willoughby, Eastbourne, is the present president.

Dawson Williams Prize to Sir Robert Jones.—The second award of the Dawson Williams Memorial Prize will be made to Sir Robert Jones in recognition of his work in pediatrics in relation to orthopedics. With the consent of the council of the British Medical Association, the presentation will be made by the president of the association on the occasion of his address at the annual meeting in London, July 26. The prize was established in 1928 by friends of the late Dawson Williams, editor of the *British Medical Journal*. It is awarded every two years or at longer intervals, at the discretion of the trustees, for work done in pediatrics.

Medical Associations in China Merge.—Plans for the merging of the National Medical Association of China and the China Medical Association were announced in the *Chinese Medical Journal* for January. Before the Japanese invasion of Shanghai, it was planned to hold a joint conference in Shanghai, April 6-13, to effect the amalgamation. The China Medical Association, which was formerly the China Medical Missionary Association, was founded in 1886 and confined its activities principally to American and European medical missionaries. The National Medical Association, on the other hand, was founded in 1915 by Chinese practitioners trained in western medical colleges. The new association will be known as the Chinese Medical Association, and its official organ will be the *Chinese Medical Journal*, which is a recent combination of the former *China Medical Journal* and the *National Medical Journal of China*.

Deaths in Other Countries

Gregorio Mendizabal, known as the dean of Mexican physicians, died, February 19, in Mexico City, aged 86. Dr. Mendizabal made special studies of influenza and yellow fever. He had represented Mexico at various Pan American and international medical and public health meetings in the United States and Europe.

CORRECTION

"Remote Results in Treatment of Gastroduodenal Ulcers."—Dr. Jean-Charles Roux, editor in chief of the *Archives des maladies de l'appareil digestif et des maladies de la nutrition*, writes that the research on gastroduodenal ulcer, described in the Paris letter in THE JOURNAL, January 23, page 330, was initiated by the Society of Gastro-Enterology of Paris and that the complete reports are to be found in the periodical which he edits.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 6, 1932.

The Descent of the Testis

Continuing his lectures at the Royal College of Surgeons, Sir Arthur Keith said that embryology had entered on a new era. Eighty years ago Owen taught that nature, in fashioning the animal body, worked to plan, much as a builder obeys an architect's specifications. Then came Darwin, who showed that every embryo was its own architect—that the powers which shaped the unfolding embryo were resident in its developing tissues. But while accepting Darwin's teaching, embryologists still tried to explain developmental events as the result of mechanical happenings—of foldings and bendings. Only recently had they escaped from this, when it was discovered that parts of a living embryo could be detached and maintained alive and that certain parts contained growth-controlling substances by which they can compel neighboring tissues to cooperate in producing a new and completed structure. Scarcely a surgical operation had not its parallel in the early stages of development. Extensive plastic operations were carried out, parts were shifted, altered in shape or entirely removed. In all these operations the tissues themselves played the part of surgeon, and there were occasional failures.

One of the commonest developmental devices was the production of pockets or hernias. A hernia is produced in the later months in each groin of a human fetus. The extrusion of the testis is, from an evolutionary point of view, a late event, and it occurs in most mammals. In some it descends only in the rutting season and returns to the abdomen after it. In lower vertebrates (birds, reptiles) it remains permanently within the abdomen. We are still uncertain as to the reason for the genital exodus. If it does not occur, the testis rarely becomes perfectly functional and usually atrophies. The evidence of comparative anatomy suggests that the atrophy is due to the high abdominal pressures to which it is exposed during efforts, rather than, as has been suggested, the higher temperature within the abdomen.

How is this developmental hernia produced? John Hunter's description, though written more than a century and a half ago, is still the best. In the fourth month a fold of peritoneum passes from the lower end of the testis to the groin. The tissue within it begins to grow, forming a peritoneum-covered plug. The lower end expands into a process, like the finger of a glove. The tip grows against the body wall and the tissues recede and expand in front of it. The growing plug and peritoneal process bring about growth changes in all the tissues of the body wall and a tunnel is fashioned. To permit the testis to follow the advancing gubernaculum or growth plug, its vessels and duct elongate. When this coordinated growth movement is over, the peritoneum and subperitoneal tissues surrounding the point of exit immediately repair and close the opening. John Hunter not only recognized the anatomic means by which the migration of the testis was brought about but was two centuries ahead of the world in understanding its nature. He attributed failure of descent to "an imperfection of constitution" of the testis. In the light of modern knowledge, this can be translated into "imperfection of the growth-controlling mechanism" that brings about the descent.

Increase in Tar in London's Atmosphere

The report on atmospheric pollution for the year ended March, 1931, which has just been issued, shows that in industrial districts the amount of solid matter deposited or brought down by rain varied from 550 tons to the square mile at one point in Lancashire to just over 72 tons at Leicester. The average

is between 200 and 300 tons a square mile. A reduction of the total deposit is recorded at about two thirds of the ninety-eight observing stations in forty-two important towns and cities. The most remarkable improvement is in the deposit of sulphates, recorded by thirty-five stations. This result is the more satisfactory as sulphur in the atmosphere plays a considerable part in the damage to buildings by smoke. Unfortunately, this improvement does not apply to London, where an excessive increase, amounting at one district in the west to nearly thrice the previous average, is recorded. In the city of London the tar deposit has increased nearly three and one-half times. No definite explanation is given for these increases. It seems that London will have to put up with black fogs for some years to come. Sufficient smoke is emitted during two or three hours of a winter's morning to provide the blackest fog, provided it fails to be carried away. There does not appear to have been any material reduction in atmospheric pollution during the last ten years, though conditions are better than in the days of the "pea-soup" fogs of thirty years ago, when gas fires were less used and railways were not electrified. The amount of smoke haze in London appears to be far worse than in some industrial districts.

Australian Natives Cannot Survive Contact with White Men

The University of Adelaide has in the past few years organized expeditions to study the Australian native, who is threatened with the fate of his kinsman of Tasmania—extinction. Much of the expense of the expedition has been provided by the Rockefeller Foundation. The last expedition was to central Australia and comprised leading Australian anthropologists —Prof. J. B. Cleland (chairman of the Board of Anthropological Research), Prof. T. H. Johnston, Prof. C. S. Hicks, Prof. H. J. Wilkinson and several physicians. The expedition makes the remarkable recommendation that those natives who have not yet come in contact with civilization should be prevented from doing so. They should be allotted extensive hunting grounds, on which Europeans should not be allowed under any pretext. The expedition considers that we surely owe this concession to a people from whom, by force and without any compensation, we have taken away their land and deprived, in too many instances, of the means of obtaining food in their own way, and even water. The expedition is afraid that those natives who have come under European influence, whatever care is taken of them, are doomed to early extinction. They have mostly lost interest in their old native customs and live a half-starved existence on the outskirts of civilization. They are made use of to some extent by the white man, but the responsibility of treating them as what they are—grown-up children—is not sufficiently recognized. Some come under the influence of undesirable whites, and the women too often produce half-castes. Thanks to the influence of Mr. Kramer of the Aboriginies' Friends Association, the natives were friendly to the expedition and submitted without difficulty to all sorts of examinations, such as blood testing, use of the apparatus for basal metabolism, and taking plaster casts of the face. The impression was received that they preserved a high standard of morals, according to their own standards. The marriages took place according to their code. But one result was that old men had several young wives, while young men had to content themselves with cast-off old wives or widows. This system has the advantage that when a man is getting too old to hunt and readily provide himself with food his wives can do this. On the other hand, the young man can provide food for his elderly wife.

The Birth Control Question

The continued pronuncements of Justice McCardie on birth control have aroused much criticism. Addressing a woman prisoner, he said: "You have pleaded guilty to the offense of abortion, performed at the request of a girl of 19. I think these abortion cases will continue so long as the knowledge of birth control is withheld. In my view the law of abortion should be amended; at present it does more harm than good. There are 300,000 mentally defective women, only a small part of whom are under institutional care. They are breeding freely every day with terrible consequences. In my view, miscarriage in such cases should be made compulsory. Too many men released from lunatic asylums go home and make their wives pregnant. The birth of such children should not be allowed. The time has come when the nation should be warned. I warn it today." He bound the woman over for three years (to come up for judgment if called on).

In the *Catholic News* a number of clerical denunciations of the judge's view have been published, and an interview was printed with Dr. Alfred Cox, medical secretary of the British Medical Association, who said: "I think the judge is exaggerating when he says that it is almost inevitable that a mentally deficient woman would bear a mentally deficient child. The legalizing of abortion opens up extremely grave questions. The British Medical Association has always taken the line that the teaching of birth control is not only a medical one but a question for the community, involving morals and religion, and the only way in which physicians can be said to have more weight than any one else is on the effects of certain methods of birth control or the induction of abortion from a medical point of view."

The lower house of the convocation of York of the Church of England has condemned the increasing dissemination through the post of literature and advertisements dealing with contraceptives and the growing display of these articles in shop windows. A resolution was unanimously passed that the postmaster general and the government should be pressed to restrict or prevent such advertisements and display. It was complained that the publicity given to the resolution on birth control of the Lambeth conference had caused an increase in the advertisement and display of contraceptives. The reply of the post-office to representations on the subject was that nothing could be done to prevent circulars passing through the post, because the sale of contraceptives was not illegal in England. It was said that a tremendous encouragement had been given to immorality among the unmarried.

Raw Milk as a Preventive of Dental Caries

In the Section of Odontology of the Royal Society of Medicine, Mr. E. C. Sprawson, lecturer on dental surgery, London Hospital, reported observations to show that raw milk influenced the calcification of the teeth and conferred immunity to caries. He supervised groups of children in institutions and was impressed by the high incidence of dental caries among them. The incidence was progressively less in the teeth, whether deciduous or permanent, in the order of their eruption. He investigated the effect of a daily ration of raw milk begun during the first twelve months of life. As the deciduous dentition was not completed until the end of the second year, he excluded from the survey all the children thus fed, until they had reached the age of 2 years. The cases fulfilling this condition numbered only forty, but the results were remarkable. The average age at which the ration was begun was 4½ months, and when the children were observed at the age of 4 years not a trace of caries was found. In thirty-three other children who were over 12 months when the ration was begun (in none not later than 2½ years), twenty-six at the age of 4½ years showed no caries and the remaining seven had fourteen carious teeth. He had thus had the remarkable experience of examining seventy children over 2 years of age, of whom sixty-three were totally free from dental caries. Yet nearly all these children were subnormal on admission to the institution, suffering from gastro-intestinal disturbances and rickets. When the ration of raw

milk was begun at later ages, an effect was still evident. In twenty-eight children it was begun at the average age of 4 years and 8 months. The present ages of these children was from 7 to 10 years and 9 months. Though most of them had carious deciduous teeth, in only two was there caries of the permanent teeth. A further control was done at a still later age. Forty-four boys came on the ration before the end of the eleventh year and were now 13½ years of age. The second permanent molar was studied and eleven cavities were found in six boys. Raw milk appeared to confer incomplete immunity if begun at a time when it was no longer a physiologic food. Nearly all children got a milk ration during the first three or four years of life, but always sterilized by boiling or pasteurization. This destroyed or impaired the antiscorbutic vitamin. The effects of raw milk on the teeth indicated a longer period of breast feeding than usually practiced. For ideal dental development he recommended a daily ration of raw milk until the age of 14.

The Certification of Blindness

In 1930 the Union of Counties Association for the Blind appointed a committee of ophthalmic surgeons and others to report on the prevention of blindness. The committee found itself faced with the lack of any scientific data as to the prevalence and causes of blindness. It seemed to them that ophthalmologists when certifying blindness should at the same time record the defects ascertained on examination and the underlying causes of blindness. The ascertainment of blindness has become more important since the blind persons act was passed in 1920, granting pensions to all persons over 50 "so blind as to be unable to perform any work for which eyesight is essential." But the absence of any uniform method of certifying blindness raises doubts as to the correctness of some of the certifications. The committee recommends that no one should be registered as blind until he has been examined and certified by a practitioner with special experience in ophthalmology and that a common form of certificate be used in all cases. The information so obtained should be collected and studied. The committee is also impressed with the necessity of obtaining precise information concerning all cases of serious visual defect in children up to the age of 16, and for them it is recommended that a similar procedure should be adopted by the board of education. With regard to the form of certificate, one used in Scotland in which a distinction is drawn between the ascertained condition of each eye and the cause of such condition is recommended. The failure to make this distinction has led to some confusion in defining the causes of blindness. For example, in interstitial keratitis, the primary cause of the blindness is not this lesion but syphilis.

The Definition of Blindness

Following a recommendation of the ophthalmologic section of the Royal Society of Medicine, the ministry of health issued a circular giving a visual acuity of 3/60 as a limit under which a person may usually be considered blind, while 6/60 or better cannot be considered blind unless there are other visual disabilities, especially a much contracted field. But it seems that, in some parts of England, persons with visual acuity (after the correction of refractive errors) of 6/60 are considered blind and others with more than 6/60, if there are other visual defects. The committee makes the following recommendations. Visual acuity means the best direct vision obtainable with each eye separately or both together as tested by Snellen's types, with focus corrected. In general a person with visual acuity below 3/60 may be regarded as blind. In many cases, however, it is advisable to test the vision at 1 meter and not to regard persons having acuity of 1/18 as prima facie blind, unless there is also considerable restriction of the visual field. A person with visual acuity of 6/60, or better, may be regarded as blind if the visual field is markedly contracted in the greater part of its extent, and particularly if the contraction is in the lower part of the field. Persons in this group suffering from homonymous or bitemporal hemianopia retaining central visual acuity of 6/18, or better, are not to be regarded as blind. With regard to intermediate degrees of visual acuity (more than 3/60 but less than 6/60), such persons may be regarded as blind if the field is considerably contracted, but not if the visual defect is of long standing and unaccompanied by material contraction of the field; e. g., in cases of congenital nystagmus, albinism or myopia. The report has been addressed to the minister of health, who has it under consideration.

The Lowest Birth Rate on Record

The fall in the birth rate continues and the lowest rate on record is once more reported. The rate for England and Wales in 1931 was 15.8 per thousand of population, which is 0.5 below the previous lowest, recorded in 1929 and 1930. The death rate was 12.3 per thousand, which is 0.9 above that for 1930. The infant death rate was 66 per thousand live births, which is 6 above that for 1930, but only in 1928 and 1930 has this rate been lower. The death rate and birth rate draw closer together each year, so that a stationary population in a few years is in sight.

BERLIN

(From Our Regular Correspondent)

Jan. 25, 1932.

Election to the Berlin Chamber of Physicians

Berlin, by exception, has its own *ärztekammer*, or chamber of physicians, although otherwise there is only one chamber of physicians in each German state. The chamber of physicians is not a federal institution but is established in accordance with the laws of the individual states composing the *reich;* for example, the chamber of physicians for Prussia and the Berlin chamber of physicians were established by an act of the Prussian legislature, Dec. 30, 1926.

The chamber of physicians was primarily created to establish a body of physicians to consider all matters pertaining to the practice of medicine, and to preserve the public health, as well as to protect the interests of the medical profession. The state and communal authorities are under obligations to afford the chamber of physicians an opportunity to express their opinions on questions coming within their sphere. In the consideration of such questions, particularly if they concern public health administration, it is incumbent on them, in suitable cases, to consult such medical experts as may be recommended to them by the chambers of physicians. The chambers of physicians are empowered to establish welfare arrangements for the benefit of physicians and their dependents.

The members of the chambers of physicians are chosen by the physicians of the respective German states *(länder)* by secret ballot. All physicians in good standing may vote. The right is, however, held in abeyance pending the rendering of a judicial decision in the event that a court investigation involving a physician has been instituted. Elections are held every four years. The members of the chambers of physicians serve without compensation. The funds for carrying on the work of the chambers are supplied in the form of annual contributions from the electorate. During the present financial stringency, any surplus funds in the hands of the chambers of physicians are used chiefly for the support of aged physicians and physicians' dependents. Under present economic conditions, public health questions play an important rôle. Every physician who is practicing medicine, or is serving in a medical capacity, must report the fact to the board of directors of the chamber of physicians. The order of business, the duties of the chairman and of the board of directors, the form of voting, and other like matters, are prescribed in the enacted law. The state supervision of the chambers of physicians and their boards

of directors is entrusted to the *oberpräsident* of the province, or state. The *oberpräsident* or his representative is empowered to sit in at the sessions of the chamber of physicians and to participate in the deliberations if he so desires.

The Aerztekammer-Ausschuss is a committee composed of delegates from the chambers of physicians of the various German states. It mediates, on the one hand, between the ministry of public welfare and the chambers of physicians, and, on the other hand, between the chambers of physicians themselves. The general supervision of the Aerztekammer-Ausschuss lies in the hands of the minister of public welfare. The medical courts of honor are governed by a special law.

Under normal conditions, an election of members to fill vacancies in the chamber of physicians proceeds quietly, but the present stormy political situation is beginning to influence fields in which pure reason should hold sway. The election to the chamber of physicians is regarded as an index to the attitude toward professional questions; hence the results of the recent Berlin election were awaited with great interest. No less than nine parties presented lists of candidates, and there was evidence that machine politics played some part in the results. A total of 5,026 votes were cast out of a total of 6,031 persons entitled to vote. The most votes (2,809) were cast for the candidates of the coalitionists, who stood for the preservation of a free medical profession. The next largest number of votes (685) were cast for the candidates of the Bund der Heilberufe für soziale Erneuerung (which comprises, among others, the physicians of the national socialists). According to the results of the voting, the mandatory distribution of members will be as follows: coalitionist list, 69; Bund der Heilberufe für soziale Erneuerung, 17; Jungärzte, 10; assistants, 7; trade-union physicians (communistic and sociodemocratic representatives of the trade-union idea in medicine), 6; social democrats, 5; ambulatorium physicians, 3; communists, 2, and the confidential physicians of the occupational brotherhoods, 1. A total of 120 members will be seated in the new chamber of physicians, which convenes early in 1932 and will be drawn from the nine parties as indicated. There are some physicians in Berlin who regard all this as undue imitation, on the part of physicians, of parliamentary tactics.

Pergamum and Ancient Medicine

Prof. Dr. Theodor Wiegand, the archeologist, spoke recently on "Pergamum and Ancient Medicine," before the Berliner medizinische Gesellschaft. Ancient medicine was highly developed, especially Greek medicine. Greek physicians occupied a high social position. Rational and empiric medicine, on the one hand, and medical magic were, at that time, more or less interwoven and not separated as they are today. The practice of medicine was regarded as a sacred task, being closely associated with the worship of the deity Asclepius, the god who came originally from Thrace to Greece, who is generally pictured with an attendant serpent, and who at a later epoch was represented in human form with the serpent emblem. The chief seat of this cult was located, during the period of the Roman emperors, in the city of Pergamum, where Galen, the most eminent physician of late antiquity, was a teacher, and where Wiegand, in recent years, has excavated the ruins of the great Asclepian temple and has reconstructed a picture of the buildings as they looked in ancient times.

Pergamum was famous for its excellent hygienic arrangements. The citadel, built on a hill having an altitude of 1,000 feet, was supplied with water by means of a system that collected the supply from a spring located on the mountain top, at an altitude of 6,500 feet, a wonderful feat of hydraulic engineering. This aqueduct was not constructed in the usual Roman manner but consisted of a pressure system that utilized the principle of communicating pipes, a knowledge of which was not supposed to extend back to that period of history.

The excavators unearthed a pipe line the tile of which fitted together with great precision, the joints being tightly sealed with large hollowed-out stones. Even a purification chamber constructed on modern principles was discovered in the course of the system. The lower city was supplied with drinking water by means of the ordinary Roman aqueducts. The drinking water, in closed tile, lead or bronze pipes, was kept strictly separated from the open water canals of the streets. Severe penalties were imposed on persons found guilty of contaminating public wells. Even the cisterns in the private homes were officially inspected every year. There were also regulations concerning the protection of house walls against moisture. Large warehouses with specially ventilated hollow floors served for the preservation of food products.

It was not known until recently exactly where the sanctuary of Asclepius was located. It was accidentally discovered when the Turkish government erected in its vicinity a garrison for troops and used for building purposes some of the stones dug up out of the ruins. There were found, in this connection, certain stones with inscriptions that clearly revealed the nature of the ruined building. From the entrance of the large sanctuary a covered colonnade, a kilometer in length, extended to the temple proper. The excavations unearthed a large court of honor and a number of buildings, some of which were used as places of worship and some for therapeutic purposes. Chief reliance for cures was placed in the famous spring, which was rediscovered and which furnishes in truth a water of excellent quality. The chief therapeutic remedy employed by the followers of Asclepius was the so-called incubation, or the rite of sleeping in the temple. This seems to have been merely a modified form of suggestion treatment. Having fallen asleep in the temple, the patient had a dream in which the way to healing was pointed out to him. It is possible that a purposeful interpretation of the dream by the physician-priest played an important part. Through the inscriptions on the stones, much has been learned concerning the nature of their physical therapy. This consisted chiefly of dietetic and, in part, drastic water treatments and hardening procedures, which today occasion no little surprise and cause one to wonder that the patients were not injured by them. It must be remembered that they were frequently applied to obese persons and persons who had been injured by overeating.

For the diversion and recreation of the large group of patients who sought this ancient shrine, rows of Ionic marble columns extended for a distance of about 350 meters on the south, west and north sides of the open court, and on the north side stood a magnificient theater that seated 6,000 persons. This immense pile of buildings was erected during the period 140-180 A. D., during the reign of the Roman emperor Antonius Pius. Later, Emperor Septimius Severus resided in the temple, where his son Caracalla sought to be cured of a stubborn malady. A colossal head of Emperor Caracalla was unearthed by the excavations.

It is to be hoped that Wiegand will succeed this year, with the aid of funds furnished by the German-American Gustav Oberländer, in clearing away the débris from the whole court of honor.

A Diet for Sportsmen

Concerning the proper diet for the sport devotee there are as yet no generally accepted criteria. Rubner, a master of research on nutrition, states that an adult man weighing 70 Kg. (154 pounds), who, in addition to his occupational work, engages in reasonable physical exercises, requires daily about 3,200 calories. Other investigators on nutrition place the food requirement at from 2,100 to 4,000 calories. As especially suitable for the sport devotee the following menu has been prepared: for breakfast, a large cup of coffee with a liberal amount of hot milk or other beverage; two slices of bread, with butter or marmalade; at noon, from 100 to 150 Gm. of meat,

five or six potatoes, a vegetable or salad, fruit; at night, three slices of bread with cold meat, fruit. Pickert in Hamburg has undertaken to study this question on a large group of men whose working performance and nutrition could be accurately regulated and observed. He used a group of policemen in training and reached the following results: The group of twenty-four men averaging 26 years of age, during a thirty-two days' course of full training, received about 4,300 calories, about 2,300 calories of which were used up in basal metabolism, food action and energy exchange. It was found that a mixed diet with regular side-dishes of fresh vegetables, salads and the like is the most satisfactory. That these quantities of food are amply sufficient was shown by the gain in weight, by a gradual increase in performance over a long period of time, and by the excellent health conditions prevailing in the group.

The Seventieth Birthday of Prof. Heinrich Braun

Every discovery has its origin in a skeptical trait of character, the ability to imagine and a clear observation of realities. Without the skeptical attitude, the power of observation is impaired by the events of the past, and without the ability to imagine the passion for creating is absent. Whereas, in the Romanic type, these three characteristics are immediately apparent from the quickness of the reactions, in the classical type everything is concealed and suppressed. Braun's creative activity developed in the quietness of the laboratory. Whereas the discoveries of Schleich that were destined to miscarry became at once generally known, the things that are fundamental in local anesthesia, the determination of the value of local anesthetics by the self-trial with the Corning (not the Schleich) wheal, have not become common property to this day; that, secondly, his fundamental discovery (1900), the mixture of narcotizing and angiospastic substances, which made local anesthesia, for the first time, a reliable and harmless procedure, received little attention, and that essentially only the third part of his researches, the painstaking development and description of the method, received deserved recognition. In other words, with the aid of the wheal experiment and with the addition of epinephrine, any one who possessed sufficient anatomic knowledge could now practice local anesthesia. Only the details needed to be worked out. With these words that Kulenkampff, Braun's successor, uttered in his address delivered in honor of the seventieth birthday of his former teacher, more was characterized than the mere external fact of the completion of seventy years of existence. These words served to portray a personality that achieved world fame through the aforementioned performances, which speak for themselves, and which, with the simple beginning in a provincial hospital in Zwickau, Saxony, became known to the physicians of all countries. Such a performance presupposes the unremitting application of all the qualities of the man, who, with conscious endeavor, took the words of Billroth as a guide and sought to make himself dispensable by aiding in the training of self-reliant physicians. Braun's autobiography contains a classic formulation of this thought, the application of which extends far beyond its purely medical aspects and which is wholely characteristic of the writer: "The social life and the social relations of man presuppose constant compromises, if they are to have a definite purpose and are to meet with any success. One may often be compelled to accept for the time being the idiosyncrasies and the peculiar views of one's associates; one may have to adjust himself to them or even to make use of them. In practical life, one must not cling to ideals that can never be realized. The person who holds out for an ideal condition before taking any action will therefore never be able to create anything permanent. Harmony can be secured only when men strive to attain an optimum that is limited and determined by the given conditions. That is nature's law that must be observed and fulfilled."

ITALY

(From Our Regular Correspondent)

Jan. 10, 1932.

Congress of Urology

The tenth Congresso della società italiana di urologia was held at Bari under the chairmanship of Professor Bruni. Professor Righetti, director of the Clinica chirurgica, in the opening address, referred to the close ties that unite urology to surgery, from which it sprang. One cannot become a urologist without first having been a surgeon. This principle, which should be kept in mind by those who plan to devote themselves to urology, originated with the ancient Italian masters of surgery, to mention only Mariano Santo da Barletta, whose instrument for the extraction of calculi from the bladder will be recalled.

DISEASES OF THE NECK OF THE BLADDER

The first topic on the program, "Diseases of the Neck of the Bladder, Excluding Hypertrophy and Cancer of the Prostate," was presented by Professor Alesio of Turin and Professor Pisani of Milan. Professor Alesio pointed out that the interest of urologists has been particularly directed to the study of those dysuric manifestations that are caused by a lesion of the neck of the bladder. Although clinical observation has brought to light many cases, the etiology and the pathogenesis are not well established. It is customary to apply the term "neck of the bladder" to the lower part of the bladder but it is difficult to specify morphologically the limits and the extent of the collum. Following the details of the histologic structure along the vesico-urethral tract, one distinguishes at a certain point two diverse structural planes. As regards the muscular tunic, from the surgical point of view, the neck of the bladder is no better defined. Beyond the internal urethral orifice, a vesical bend and a urethral bend of the collum will be observed, together with other connected structures: the uvula vesicae, the prostatic sinus, and the upper extremity of the urethral crest. The site, the direction and the mobility of the neck of the bladder demonstrate its topographic importance, and its backward and downward movement reveal this importance when the bladder begins to empty itself, as shown by the fluoroscopic study of the process of micturition. Connected with the prostate, as it is, the neck of the bladder derives to a great extent its structural characteristic from the glands of the prostate, scattered in every direction through the muscular and connective tissue of which it is composed. In the glandular element one must recognize an important component of the neck of the bladder, which being diversely constituted in different subjects serves to mark the individual character.

Regarding the contractility of the collum and the mechanism of the opening and closing of the bladder, it has been assumed for a long time that the motor fibers that innervate the collum, being derived from two different systems, the sympathetic and the autonomic, have an antagonistic action. But, according to modern conceptions, this antagonism is by no means demonstrated, and the fact must be recognized that uncertainty still exists in regard to the inhibitive action of the nerves of the bladder. New difficulties arise when one seeks to demonstrate the existence of a spinal center by the tonic contraction of the sphincter. The existence of such a center would seem to be established by data based on clinical observations and not contestable by the assumption of an automatic function developed in the parietal nerve elements; but it is difficult to localize it. The neck of the bladder is subject to functional disturbances, which are caused chiefly by mechanical influences, which are brought to bear when there occur changes in form in the lower part of the bladder and in the portion of the urethra capable of preventing the closure of the bladder or of constituting an obstruction at the internal urethral orifice. The obstruction may be complete or incomplete, temporary or permanent.

Calculi and foreign bodies are the most common factors that obstruct the closure of the bladder; in addition there occur tumors, cicatricial adhesions, and sclerotic changes of cervical tissues. Among the factors causing complete temporary obstruction, is congestion. Stenosis, valves, hypertrophy of the verumontanum, tumors or cysts may impair the permeability of the urethral lumen. The terms "valves," or "bars," of the collum, "median bars," "prostatic bars," stenosis, contractures, by means of which an effort is made to bring under a single category most of the abnormalities of the collum and those lesions that cannot be classified under the neoplasms, have no ground for existence if considered histologically. Nevertheless, it is necessary to admit that there are peculiar diseases of the neck of the bladder although pathology has not created a special chapter for them. The causes of these diseases may be nervous or organic. Inflammation constitutes the more common etiologic factor in diseases of the neck of the bladder, the most typical manifestations of which are inflammatory sclerosis and constrictions.

Prof. Luigi Pisani of the University of Milan presented the second part of the topic, which dealt with diseases of the neck of the bladder from the clinical point of view. He said that it is impossible to separate in a frank manner the pathology of the neck of the uterus from that of the prostate, the pathology of the seminal vessels and that of the posterior urethra in the man, and of the urethra and of the reproductive organs in the woman, from the pathology of the bladder. The topic should take as its principal subject the retentions of cervical origin, due mainly to a lesion localized in the collum, which impairs its function and causes the retention; hence his study would consider chiefly the collum in the male sex. Characteristic of these types is the rarity of precise observations, which explains the manifold terms proposed by various authors. For the term *prostatici senza prostata*, proposed by Guyon, have been substituted the terms vesical prostatism, contractures, fibrosis, atrophy of the prostate, spasm, idiopathic hypertonia of the smooth sphincter muscle, congenital dyscrasic hypertrophy, and others. There are many theories, and it is important to attempt to clarify the question.

Vesical urinary retention always presents in its pathogenesis obscure features pertaining to the cervical lesions of the bladder. The purpose of this paper was to consider whether it is possible to assume the existence of a clinical entity whose pathologic basis, different from that of prostatic adenoma, has likewise its seat in the neck of the bladder, and whose symptomatology culminates in the manifestation of retention. This clinical entity has, in common with the other well known forms, the same complications; but the clinical and instrumental observations on which are based the diagnosis and the treatment are different.

It is difficult to confine attention to the collum and to the smooth sphincter muscle, and to neglect the two other factors that play a part during micturition: the vesical muscle and the striate muscle. The manifestations ascribed to the neck of the bladder are often symptoms of a disorder which has its focus at another point and which nearly always requires the participation of other pathologic causes not identifiable in the collum (detrusor urinae muscle, smooth sphincter muscle). Hence, clinically, it is difficult to speak of "diseases of the neck of the bladder" and make of them a special nosologic chapter. There may, however, be clinical syndromes in which the pathologic cause is strictly localized in the collum, is primarily in that seat, but is not influenced by other remote factors, so that a cure can be effected only by the removal of the collum. The clinical syndrome can be characterized by successive stages. In the beginning there appear, in the collum, minute structural lesions, which produce at the opening an abnormal state of resistance. There begins then the first phase characterized by manifestations of an irritative nature, with disturbance of micturition of a dysuric nature. There follows an extension of the structural lesions, which render the resistance at the opening more or less permanent. The collum undergoes an irregular thickening and a retrocervical, pretrigonal cavity is formed. After a period of apparent quiescence, there appear complications that commonly supervene as corollaries of every vesical retention, mainly sepsis, pyelo-uretherectasis, backflow, urinary infection, and the like.

The interpretation of the functional disturbances is still somewhat uncertain. It does not appear that one may speak of a spasm, much less of a paralysis of the trigon. Some authors support the theory of an increased tonus of the sphincter muscle. The speaker considers it justifiable to classify among the important urinary syndromes, alongside prostatic adenoma and urethral stenosis, the rigid induration of the neck of the bladder, called by some authors "disease of the collum." He prefers to call this syndrome, in view of the definitive anatomic substratum, by the term "sclerosis of the collum." The fundamental nature of this type is degenerative. It is an acquired disease and has a chronic or toxic course. It is not easy to distinguish this condition from prostatic adenoma and atrophy of the prostate. For the diagnosis, in addition to the described symptoms, bimanual exploration, endoscopic examinations and cysto-urethrography are useful. The treatment should be influenced by the same conceptions as prostatic adenoma. In the beginning types medicinal remedies, bloodless instrumental treatment and electrotherapy are effective. The presence of a vesical residuum makes necessary direct operative local treatment. Of all the proposed methods the speaker prefers total removal of the collum, leaving the bladder wide open. This method has been followed by immediate good results.

Professor Cimino of Palermo, commenting on a series of cases, said that one must be careful in the use of roentgenotherapy in the treatment of these morbid types. Bloch of Florence stated that he did not agree with the speakers with regard to the pathogenic conception of "disease of the collum." Nego and Sacchi of Turin and Lilla of Leghorn contributed communications on "disease of the vesical collum." Columbino of Turin suggested the substitution of "wide stenosis of the collum" for the term "disease of the collum." Cilento of Naples discussed endometrioid formations of the bladder that sometimes simulate vesical retention.

After some further communications, the society chose Rome as the meeting place for the next congress. The chief topic on the program will be "The Remote Results, Orthopedic and Functional, of Renal Surgery and of Consecutive Urethral Surgery."

BUDAPEST

(From Our Regular Correspondent)

Feb. 5, 1932.

Professor Calmette's Standpoint on the Lübeck Affair

Professor Calmette publishes a note in a recent issue of the *Pesti Napló* in which he says: "It was my intention to cloak myself in deep silence up to the end of the Lübeck trial. As, however, the antituberculosis preventive inoculations were unjustly attacked in their foundations, particularly by Prof. Dr. Enderlein, in a German paper, I find it necessary to make known my standpoint. It is my feeling that I owe this, not so much to French medical science, the less so toward my own person, but toward such a scientific method, which interests all mankind. But let the figures speak for themselves. Up to Oct. 1, 1931, about one million children have been inoculated in the whole world, without a single such mishap or accident that could be attributed to the inoculations proper. In Lübeck, 242 children were inoculated and out of these 76 died as a result of the intervention. The conclusion to be drawn is that in Lübeck the children received something quite different from B C G. It is my opinion that it is the task of the Lübeck court to decide the nature of this vaccine and to verify the

responsibility. This much I can say about the essence of the matter.

"Now let us discuss the article of Professor Enderlein, which appeared in the *Deutsche Allegmeine Zeitung*. I have to enlighten the readers who took notice about the contents of this article, that those so-called physiologic data, which are enumerated in the article, are nothing else but pure assumptions, abstract conclusions, which are not based on any experimental facts. The absolute lack of practical confirmation robs these facts of any scientific character. It is regrettable that from an occasion of such great importance some people try to influence the public by worthless arguments. In this error they are much less led by the love of justice than by an endeavor to gratify their passions. In the land of Pasteur, the opinion is prevalent that such excursions to the camp of politics have to be strictly avoided. Our task can be only to work for the advancement of science and particularly for the progress of preventive medical science. Instead of publishing much or often harmful theories we follow the plan that we publish only such reports that have been scrupulously controlled by experiments. This is our tradition and this is our strength. We can verify that, since the start of the B C G disputes, applications for vaccines have been made in an ever increasing number. At present we supply daily vaccinating material sufficient for 320-340 children; that is to say, the number of inoculations made in France in a single day exceeds the number of the total inoculations made in Lübeck. On the other hand, control experiments are in course all over the world and all of these prove favorable to B C G, the harmlessness of which is beyond doubt. Among such circumstances we await the opinion of the German government's experts, before the Lübeck court, with full confidence, and we hope that their opinions will be given the greatest publicity."

Strike of Seventy Young Physicians

Seventy assistant physicians and junior dressers, employed at the outdoor departments of the Budapest Jewish hospital, went on strike because the management of the hospital refused their appeal for salaries. The hospital board argued that, owing to unfortunate financial circumstances, they have to fight to keep the hospital going; on the other hand, the positions, when announced, were emphasized to be gratuitous. The medical association intervened on behalf of the young doctors, also in vain, because the managers of the Jewish hospital declared it was utterly impossible at present to grant their request, although they agree that it would be fair to allow some modest payment, which they will let them have whenever the financial conditions of the Jewish community improve. The assistant physicians did not resume work.

Nervous and Mental Indications for Induced Abortion

Dr. P. Büchler of Budapest University holds the view that induced abortion is indicated in cases of severe reactive depression, when the patient displays obstinate resistance against taking nourishment, or if she develops suicidal tendencies. Institutional treatment must first be tried, and abortion is indicated only if this treatment is not practicable. In an institute, resistance to food can be overcome by forcible feeding, and suicide can be prevented by careful watching; but even in institutions, the pregnancy may have to be terminated. Most difficult is the problem of schizophrenia. Although it is beyond dispute that the reproduction of schizophrenic individuals is undesirable, effort must be directed to the prevention of gestation rather than its interruption. There are no definite general indications in psychiatry, but in psychopathies arising from severe intoxications and infections, and in certain cases of paralysis, intervention is justified, and, at any rate, danger to the life of the mother can be avoided. As a rule, when a psychosis is suspected, Dr. Büchler recommends the conveyance of the patient to a psychopathic hospital, where the physician in charge can take what action he deems necessary. Severe cerebral and spinal diseases are absolute indications for abortion. Disseminated sclerosis is an important one, because this diagnosis tends to progress after childbirth: palsies, ataxia of a great degree, and the quick loss of strength may follow. This holds true also for locomotor ataxia since ataxia increases after childbirth, and bladder and intestinal troubles may supervene. It is beyond dispute that spinal and cerebral tumors, syringomyelia, progressive spinal muscular atrophies, hereditary chorea, lateral sclerosis, and severe forms of epidemic encephalitis form absolute indications. In doubtful cases, Dr. Büchler holds that social and eugenic considerations may be allowed to influence the decision, but only to a minor degree.

The Occupational Diseases of Physicians

Dr. Antal details in the *Népegészségügy* (People's Health) the results of his investigations as to the dangers to which physicians while following their vocations are exposed. He says that the public does not appreciate the risks to which physicians are exposed when they attend them. Behind the back of the doctor in the tropics there is constantly lurking the bugbear of bubonic plague, cholera and yellow fever. The Dutch government knows this well. This is why after a comparatively short term of service a full pension is allowed, few surviving to enjoy it. If a patient falls ill with an infectious fever on a ship, everybody shrinks from going near the cabin where the patient lies, but the surgeon has to rush to him, as if he had a magic mantle which protects him from all infections. How different it really is. Not only the physician himself but also his family and surrounding, intimate friends are endangered. How many doctors have carried the deadly scarlatina and diphtheria into their own families? How many children of physicians became the sacrifices of their father's occupation? Physicians employed in insane asylums are prone to special dangers. They are not infrequently attacked, cruelly beaten, and even killed by their own patients. Was not the unfortunate Dr. Gudden dragged into the water and drowned by the crazy Louis II, king of Bavaria? Doesn't blood poisoning, syphilis and tuberculosis occur frequently enough with surgeons, anatomists and pathologists? We all know the expression "dentist's heart," which is the consequence of the forward posture of the body through the years. Eye disease may be the result of constant microscopic work as is done by histologists and bacteriologists. The great Malpighi became almost totally blind from continuous microscopic work. How dangerous may be the work of the radiologist. Practitioners respond to requests for their services in the most severe weather. In many cases they contract sciatica, rheumatism, pneumonia as the result. We know from statistics that the relatively short duration of the lives of physicians is due to heart diseases and arteriosclerosis, the oncome of which is enhanced by their work.

JAPAN

(From Our Regular Correspondent)

Jan. 21, 1932.

Smallpox on Ships at Yokohama

A first-class passenger, an American, on board the steamship *President Jackson*, which entered the port of Yokohama with about 136 passengers, was found to have smallpox, January 3. After the examination of fifty-four persons among the passengers and crew, who came in contact with the disease, all persons on the ship were allowed to go ashore. Another case of smallpox was found on a British steamer of the United British Shipping Company, which left Shanghai, January 12, and touched at Yokohama on her way to Vancouver, January 15. The patient, the first mate of the ship, was sent to the hospital. The authorities are of the opinion that there is no danger of the disease spreading in Japan.

Health Problems in Tokyo

The metropolitan police held a meeting of health officers of all the police stations in Tokyo, January 11, to find out what epidemic diseases were present. From January 1 to January 6, 198 cases of infectious diseases were reported in Tokyo. The total number of cases of epidemic diseases that occurred during 1931 was 22,759, an increase of 2,098 cases over the number that occurred in 1930. The increase was due largely to diphtheria, scarlet fever and dysentery; the 4,782 cases of typhus represents a small decrease. The cases of dysentery in children seem to be on the increase in number this year.

The social bureau, which has twelve children's consultation offices in Tokyo, intends to examine the members of 12,000 families and to give them medical advice.

In Hongo, one of the fifteen wards of Tokyo, Baronesses Wakatsuki and Shidehara, wives, respectively, of the ex-premier and the ex-foreign minister, and other women of rank, plan to raise a large sum of money to improve the health of children whose parents are too poor to have them take their lunch to school. The committeemen of the thirty-six social work offices in the city will cooperate in this work.

Medical Establishments

The government dietetic institute, which was about to be discontinued for reasons of economy, it is reported, will continue as an independent establishment through the strenuous efforts of the director of the institute, Dr. Saeki.

Demonstration at Leprosarium

On the evening of January 17, about 480 of the 700 patients of the Kyushu Leprosarium tried to escape and go to the Kumamoto prefectural office to present a petition to the authorities. The demonstration was caused by a rumor that the chief of the asylum, Mr. Kawamura, and one other member, who were loved deeply by the patients, were going to be removed from their posts. Policemen, gendarmes and firemen succeeded in making them return to the institution.

The Medical Budget for 1932

Generally, the budget for the fiscal year 1932 has been curtailed in all departments in this country excepting that of public health. Especially the following six items can be said to have received generous appropriations: to aid in carrying out antiparasitic regulations, 10,000 yen; for the manufacture of morphine and allied alkaloids, 12,250 yen; for the enlargement of the national leprosarium, 70,000 yen; for the enlargement of the Kusatsu leprosarium, 120,000 yen; for the manufacture of codeine hydrochloride, 197,178 yen; for the International Congress on Hygiene, 5,000 yen.

Medical Meetings

The twelfth general meeting of the Keio Medical Society was held, Nov. 6, 1931, in the Keio Medical College at Yotsuya, Tokyo. Dr. Jennings, an exchange professor from the Rockefeller Foundation, was invited to lecture on the "Significance of Fetal Defects." Professor Koizumi acted as interpreter.

At the scientific meeting of the Kitasato Institute in Tokyo, Nov. 17, 1931, Dr. Matsunaga read a paper on "Hemolysis by the Staphylococcus." Dr. Mijajima, who was home on leave of absence from the League of Nations, made an address on the present condition of medical affairs in Europe and America.

Personals

Dr. Nozu of Tokyo Imperial University, Dr. Okuno of the Government Institute for Infectious Diseases, and Dr. Akatsuka of the St. Luke's International Hospital at Tsukiji, Tokyo, have left Yokohama for America, to study for two years at the Rockefeller Institute. After their return home they are to be rural health directors.

Marriages

JOHN AUSTIN KERR, Santa Marta, Colombia, to Miss Janet Fraser MacLennan of Oberlin, Ohio, February 20.

MARK T. PHY, Hot Lake, Ore., to Mrs. Gladys R. Kidwell of Baker, at Walla Walla, Wash., Dec. 19, 1931.

HARRY H. EPSTEIN, Trenton, N. J., to Miss Ruth Goldstein of Brighton Beach, N. Y., February 21.

ARTHUR TAYLOR HENRY, Vancouver, B. C., Canada, to Miss Marguerite Neilson, January 27.

JOHN BRAXTON MCKEE, Winchester, Va., to Miss Ruth Loraine Bussey of Detroit, January 1.

ROBERT D. EVANS, Minneapolis, to Miss Lucille Lusk of Mankato, Minn., recently.

LEWA WILKES, La Grande, Ore., to Mr. Cecil V. Ager, Dec. 26, 1931.

SAUL FREEDMAN to Miss Belle Federman, both of New York, January 17.

Deaths

John Farquahar Fulton ✠ St. Paul; University of Pennsylvania School of Medicine, Philadelphia, 1880; Secretary, Section on Ophthalmology, 1885-1886; Secretary, Section on Laryngology and Otology, 1893-1894, and Chairman, 1894-1895; Trustee American Medical Association, 1901-1904; professor emeritus of ophthalmology and otolaryngology, University of Minnesota Medical School, Minneapolis; member of the American Academy of Ophthalmology and Oto-Laryngology and fellow of the American College of Surgeons; past president of the Minnesota State Medical Association and the Ramsey County Medical Society; on the staffs of St. Luke's and Charles T. Miller hospitals; attending oculist to the Wilder Charity Dispensary; aged 73; died, February 1, of carcinoma of the bladder.

Norman Kitson McIvor, Winnipeg, Manit., Canada; Manitoba Medical College, Winnipeg, 1908; fellow of the American College of Surgeons; lecturer on surgery at his alma mater; served during the World War; surgeon to the outpatient department, Winnipeg General Hospital; aged 56; died, Dec. 30, 1931, in the Misericordia General Hospital.

Ernest Roy Logan, Omar, W. Va.; Ohio State University College of Medicine, Columbus, 1917; member of the West Virginia State Medical Association; served during the World War; aged 41; died, January 13, in the Hatfield-Lawson Hospital, Logan, of pneumonia, mitral stenosis and dilatation of the heart.

James Franklin McLay, Hamilton, Ont., Canada; University of Toronto Faculty of Medicine, 1913; served during the World War; formerly member of the board of education, medical health officer, coroner and member of the council of Grimsby; aged 48; was found dead in his garage, January 1.

Sidney Nixon Davis, Welland, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1891; member of the Associated Anesthetists of the United States and Canada; served during the World War; on the staff of the Welland County Hospital; aged 63; died, Dec. 31, 1931, of pneumonia.

Joe Albert Hartsell ✠ Concord, N. C.; Jefferson Medical College of Philadelphia, 1912; past president and secretary of the Cabarrus County Medical Society; served during the World War; formerly county coroner; on the staff of the Concord Hospital; aged 42; died, February 18, of heart disease.

Clinton Benjamin Hawn ✠ Albany, N. Y.; Albany Medical College, 1906; clinical professor of medicine at his alma mater; on the staffs of the Anthony N. Brady Maternity Hospital and the Albany Hospital; aged 50; died, February 12, of coronary thrombosis and coronary sclerosis.

William L. Baum ✠ Chicago; Jefferson Medical College of Philadelphia, 1888; fellow of the American College of Surgeons; served during the World War; dermatologist to St. Luke's Hospital and the Post-Graduate Hospital; aged 64; died, February 22, of cerebral hemorrhage.

Ralph Spencer Cone ✠ Westwood, N. J.; University and Bellevue Hospital Medical College, New York, 1906; for seventeen years member of the board of health; aged 52; died, January 24, of carcinoma of the stomach with metastasis to the mediastinum and neck.

Augustus Farlin House, Los Angeles; Cleveland Medical College, 1871; formerly associate professor of clinical surgery,

Cleveland College of Physicians and Surgeons; Civil War veteran; aged 84; died, February 2, of coronary thrombosis and arteriosclerosis.

Joseph A. Murphy ✠ Medical Director, Captain, U. S. Navy, San Diego, Calif.; Medico-Chirurgical College of Philadelphia, 1898; entered the Navy in 1900; aged 56; died, January 22, in the U. S. Naval Hospital, of cerebral hemorrhage.

Aelic Edward Ferguson, Austin, Ky.; University of Louisville School of Medicine, 1905; member of the Kentucky State Medical Association; aged 56; died, February 2, in the Community Hospital, Glasgow, of heart disease and pneumonia.

Preston Joseph Johnston ✠ Kane, Pa.; Medical College of the State of South Carolina, Charleston, 1913; member of the South Carolina Medical Association; served during the World War; aged 40; died, February 15, of coronary embolism.

George Phillip Pipkin, Pueblo, Colo.; Medico-Chirurgical College of Kansas City, Mo., 1902; member of the Colorado State Medical Society; medical superintendent of the Corwin Hospital; aged 58; died, January 27, of pulmonary tuberculosis.

George Winters Lilly, Kansas City, Mo.; University Medical College of Kansas City, 1887; formerly on the staffs of St. Joseph's Hospital and St. Luke's Hospital; aged 66; died, Dec. 26, 1931, of atrophic gastric ulcer.

F. **Parks Ogden,** Louisville, Ky.; University of Louisville School of Medicine, 1902; member of the Kentucky State Medical Association; formerly member of the city council; aged 51; died, February 6, of heart disease.

Charles Sheridan Downes, San Francisco; College of Physicians and Surgeons of San Francisco, 1900; aged 68; died, Dec. 2, 1931, in St. Mary's Hospital, of lobar pneumonia, arteriosclerosis and diabetes mellitus.

Flavius E. Hartsell, Oakboro, N. C.; Baltimore Medical College, 1895; member of the Medical Society of the State of North Carolina; aged 62; died, February 14, in the Yadkin Hospital, Albemarle, of encephalitis.

Jacob S. Hicks, Allegany, N. Y.; Trinity Medical College, Toronto, Ont., Canada, 1891; member of the Medical Society of the State of New York; aged 63; died, February 8, in a hospital at Colborne, Ont., Canada.

Hugh Lytle Hough ✠ Lancaster, S. C.; Birmingham (Ala.), Medical College, 1908; formerly health officer of Florence, Ala.; aged 53; died, February 6, of injuries received in an automobile accident.

James Mendenhall Dunlap, Ansonville, N. C.; University of the City of New York Medical Department, 1876; aged 81; died, February 14, in the Anson Sanatorium, Wadesboro, of cerebral hemorrhage.

Samuel S. Salisbury, Los Angeles; Hahnemann Medical College of Philadelphia, 1873; member of the California Medical Association; aged 84; died, February 1, of cerebral hemorrhage.

Domenico Jorio, Los Angeles; Royal University of Naples Faculty of Medicine and Surgery, Napoli, Italy, 1903; aged 56; died, Dec. 17, 1931, of coronary occlusion and coronary sclerosis.

Wesley Wright Pirt, Winnipeg, Manit., Canada; Manitoba Medical College, Winnipeg, 1909; served during the World War; aged 50; died suddenly, Dec. 17, 1931, of angina pectoris.

Adam Herney, San Diego, Calif.; Ensworth Medical College, St. Joseph, Mo., 1893; aged 61; died, Dec. 26, 1931, of arteriosclerosis, hypertension, hemiplegia and bronchopneumonia.

Gibbon William Carson, St. Louis; Missouri Medical College, St. Louis, 1878; member of the Missouri State Medical Association; aged 77; died, January 23, of heart disease.

Rupert Edward McKibbon, Seattle; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1897; served during the World War; aged 57; died, Nov. 25, 1931.

James Elijah Goethe, Jacksonville, Fla.; Baltimore Medical College, 1892; member of the Florida Medical Association; aged 77; died, February 1, of cerebral hemorrhage.

Joshua A. Downs, Los Angeles; State University of Iowa College of Medicine, Iowa City, 1897; aged 62; died, Dec. 30, 1931, of organic heart disease and lobar pneumonia.

John Bertrand Woodworth, Cleveland; Homeopathic Hospital College, Cleveland, 1893; served during the World War; aged 61; died, January 1, of chronic nephritis.

Thomas Judson McPhee, Nanaimo, B. C., Canada; McGill University Faculty of Medicine, Montreal, Que., 1907; aged 51; died, Dec. 20, 1931, as the result of a fall.

Albert Chester Johnson, New York; Bellevue Hospital Medical College, New York, 1894; aged 50; died suddenly, January 30, of carcinoma and thrombosis.

Haven Day Skinner, Modesto, Calif.; Drake University College of Medicine, Des Moines, Iowa, 1904; aged 50; died, Dec. 27, 1931, of cirrhosis of the liver.

Claude C. Craighead, Athens, La.; Kentucky University Medical Department, Louisville, 1906; aged 56; was killed, January 24, in an automobile accident.

Clifford Samuel Chapin ✠ Great Barrington, Mass.; Bellevue Hospital Medical College, New York, 1896; aged 58; died, January 27, of angina pectoris.

Frederick Alexander Rosebrugh, Grimsby, Ont., Canada; University of Toronto Faculty of Medicine, 1892; aged 63; died, Nov. 25, 1931, of pneumonia.

Robert Newton Mekemson, Biggsville, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; aged 83; died, January 21, of mitral insufficiency.

Lorrimer Fauntleroy James ✠ Richmond, Va.; Medical College of Virginia, Richmond, 1895; aged 57; died, Dec. 29, 1931, of influenza and pneumonia.

Robert Nathaniel Todd, Indianapolis; Central College of Physicians and Surgeons, Indianapolis, 1899; aged 59; died, January 27, of pernicious anemia.

Oliver Bernard Witte, Fredericksburg, Texas; University of Tennessee College of Medicine, Memphis, 1919; aged 38; died, January 14, of pneumonia.

Daniel Thomas Crawford, Youngstown, Alta., Canada; University of Toronto Faculty of Medicine, Toronto, Ont., 1896; died recently, in Hanna.

Guardey O. Hall, Oklahoma City; Epworth College of Medicine, Oklahoma City, 1909; aged 49; died, January 27, of acute dilatation of the heart.

Annie Laurie Sawyer ✠ Atlanta, Ga.; Woman's Medical College of Pennsylvania, Philadelphia, 1900; aged 67; died, January 20, of myocarditis.

Arthur Charles White, Chickasha, Okla.; Toledo (Ohio) Medical College, 1897; aged 59; died, January 18, of chronic nephritis and endocarditis.

Albert Hans Scheffsky, St. Louis; St. Louis College of Physicians and Surgeons, 1918; aged 43; died, January 29, of illuminating gas poisoning.

Dennis D. Casto, Ripley, W. Va.; University of Louisville (Ky.) School of Medicine, 1891; aged 64; died, January 18, of carcinoma of the liver.

John B. Aycrigg, Ridgewood, N. J.; College of Physicians and Surgeons in the City of New York, 1879; aged 77; died, January 25, of pneumonia.

Charles W. Salisbury, Los Angeles; Starling Medical College, Columbus, 1882; aged 77; died, January 21, of chronic nephritis and cystitis.

Fred Leland Goddard, Goddard, Alaska; Long Island College Hospital, Brooklyn, 1887; aged 69; died, January 9, of cerebral hemorrhage.

Charles W. Judkins, Skowhegan, Maine; Hahnemann Medical College of Philadelphia, 1881; aged 76; died, January 22, of heart disease.

Elmer Martin Perry, Fort Spring, W. Va.; Baltimore Medical College, 1895; aged 62; died, January 6, of asthma and bronchopneumonia.

Howard C. Jones, Danville, Ind.; Indiana Medical College, Indianapolis, 1877; aged 78; died, January 23, at Knox, of pneumonia.

David R. Harris, New Castle, Pa.; Hahnemann Medical College of Philadelphia, 1878; aged 77; died, in January, of heart disease.

John W. Hall, Portland, Ind.; Medical College of Ohio, Cincinnati, 1872; aged 86; died, January 20, of cerebral hemorrhage.

Robert H. Casperson, Miami, Fla.; Jefferson Medical College of Philadelphia, 1884; aged 72; died, January 23, of myocarditis.

Hannibal A. Greenleaf, Clarksville, Ind. (licensed, Indiana, 1897); Civil War veteran; aged 85; died, January 15, of senility.

Abraham F. Smith, Urbana, Ind.; Columbus Medical College, 1878; aged 79; died, January 28, of embolism.

Martin V. Miller, Palatka, Fla.; Atlanta Medical College, 1893; aged 57; died, January 24, of pleurisy.

Bureau of Investigation

M. SAYLE TAYLOR

"America's Doctor of Matrimony" Who Claims to Reveal the Mysteries of Sex

"Dr." M. Sayle Taylor goes about the country discoursing on sex, selling books and pamphlets on the same subject and exploiting a "patent medicine" which seems to have been called, variously, "Vagitone" and, more recently, "La-Fon." Vagitone used to come as a liquid, but when the name was changed, it was put out in powder form. Taylor also sells a vaginal douching device that he calls "Vagispray." M. Sayle Taylor's present activities are of comparatively recent date. Some five or six years ago, Taylor is said to have been superintendent of schools in North Bend, Oregon. While in that city, he is said to have become associated with a Mr. and Mrs. Westheffer in leasing a hotel. After Mr. Westheffer's death M. Sayle Taylor left North Bend in 1926.

M. Sayle Taylor has appeared at motion-picture theaters in connection with films of an erotic character; at other times, he has given "stage presentations" in which were used "living models" and "human charts." Three or four years ago, Taylor was in Chicago appearing in connection with a motion picture entitled "Streets of Sorrow." The Chicago *Tribune's* motion-picture critic is a woman and because Taylor, at that time, was advertising that his show was for "Men Only," she asked one of the men on the staff of that paper to drop in and report what he found. Mr. Babcock, the reporter in question, gave what we believe to be the best description yet of Taylor's performance and it is revealing enough to be quoted at some length:

Men!
SEX-MYSTERIES
UNVEILED!
The Only Scientific Expose of TRUE MARRIAGE Ever Shown!
DR. M. SAYLE TAYLOR'S
'Married Love'
Solving the Problems of Lost Manhood and Showing How to Retain Virility, Power and Pep
MEN ONLY
ENTIRE WEEK, DEC. 9—2 SHOWS DAILY
MATINEES, 2:15—NIGHTS, 8:15
ALL SEATS 50c
MONEY BACK IF NOT 100 PER CENT SATISFIED
NO ONE UNDER 18 ADMITTED
Parkway
THEATRE DELAWARE AT ADAMS
WOMEN!
ONE LAST CHANCE
FRIDAY MATINEE, 2.15
MEN ONLY FRIDAY NIGHT, SATURDAY MATINEE AND EVENING
SEE AND HEAR
DR. M. SAYLE TAYLOR
in
"MARRIED LOVE"
A Solution of the Most Intimate Problems of Marriage and Womanhood Revealing the Mysteries of Sex
WOMEN
Friday 2.15 ONLY
MEN
Every Night and Saturday Matinee
NO ONE UNDER 18 YEARS ADMITTED
PARKWAY
THEATRE DELAWARE AT ADAMS

Photographic reproduction (greatly reduced) of some typical M. Sayle Taylor advertising.

"CHICAGO YOKELS READY VICTIMS OF ANCIENT 'MEN ONLY' STUFF"

> "The 'Men Only' show now running at the Rose theater is the choicest bit of boob bait to be found in the loop. It is the old outdoor medicine show, the street carnival 'anatomy' show, a 'Way Down East-Lulu Belle-Shanghai Gesture' production, and the old army game all wrapped up for the price of one. The loud speaker at the Rose screams to the passerby on Madison Street that here is a sensational exposé of sex. The passing sucker pauses, and bites. Inside, after separating himself from 50 cents for admission, he is inveigled into forking over a dollar for further 'information.' And this, mind you, in the heart of civilized, sophisticated Chicago. The performance purports to be the unreeling of a movie entitled 'Streets of Sorrow'—'and special features.' They consist of a news reel and a lengthy discourse by the self-styled sex evangelist of the world.
>
> "This Billy Sunday of the sex world says his name is Dr. M. Sayle Taylor and that his title is president of 'The National Society of Eugenics—strictly philanthropic.' His 'message' is so appallingly crude and nastily nauseating that at first the stronger stomached of the audience are inclined toward lusty laughter. However, they gradually succumb to the wizardry of his eloquence, until, at the end, they are whipped into a frenzy of morbid sensationalism. At that point comes the high powered salesmanship. Three paper pamphlets, dealing with the mating instinct and other problems appertaining thereto, are produced, and sold for a dollar a set. . . . 'The ushers will now pass among you, gents. Your first and last chance to get this startling information—and all for one little dollar bill.' . . . The ushers are usherettes of, apparently, immature years.
>
> "At first the doctor impressed me as a learned man become an introspective entomologist on the subject of sex. But when I saw the cash register developing a hotbox I concluded there might be laughter in his lunacy. The man of science explained that he had intended to demonstrate with graphic charts and beautiful pictures, but that the City Hall wouldn't permit it. I shudder to think what might have been unfolded before my eyes had not Mr. Bill Thompson and his minions stepped in and preserved my innocence.
>
> "As for 'Streets of Sorrow': The doctor took up so much time that I could stay for only the fore part of the movie. What I saw was a mawkish oversexed overdone, amateurish attempt to depict post-war Vienna. Noting that it featured Greta Garbo, I sought to learn the year of its vintage, but could find no date indicated. Acting, direction, plot, and photography were equally bad. At the point where I made my regretful departure the soulful-eyed Miss Garbo had just accepted extra money from her employer. What thereupon took place or happened to the poor working gel I can only surmise."

In June, 1930, Taylor was putting on his stuff in New Orleans and the papers, at that time, reported that M. Sayle Taylor had been arrested "on the charge of operating a disorderly house." The District Attorney reported that Taylor claimed at first to be a medical man, but this was found to be false, and that he also claimed to be well known in London; this, too, was found to be false. Taylor offered to close up and leave town and as the officials' object was to stop his so-called lectures, he was permitted to do so and the case was dismissed.

When Taylor was in New York in 1929, he was forced by the authorities to drop the title "Dr." before his name. There, apparently, he was working the "stage-presentation" scheme, for according to a report that appeared in the New York *Herald-Tribune* at the time: "At the close of his lecture, the fat, thin, tall, short and normal girls paraded on to the stage in bathing suits," as a *piece de resistance* for the "women-only" audience, Taylor announced, "If you will all just wait, you will see the perfect man." And, as the *Herald-Tribune* stated, "not a woman budged until 'Samsted' had finished his classical posing."

As has already been mentioned, Taylor has for sale a number of little pamphlets that bear such intriguing titles as: "Facts for Wives — Plain Truths About Marriage"; "The Secret of Youth and Charm: Plain Sex Truths for Women"; "Natural Birth Control and Predetermination of Sex"; "How to Know Your Affinity: A Study of Glands"; "Sex Vigor: How Retained; How Regained."

These little brochures (about four inches by six inches in size and from twelve to thirty-two pages) come in highly-colored paper covers and are listed at 50 cents each. They are poorly printed on cheap paper, and when produced in quantities, should not cost more than one cent apiece to turn out.

A study of some of these brings out the interesting fact that the pamphlet, "The Secret of Youth and Charm," which comes in a cream-colored cover, is identical, except for a few additional lines, with "Facts for Wives," which comes in an orange-colored cover. Various booklets repeat entire paragraphs.

Taylor also puts out a little more elaborate book, "The Male Motor," which when bound in cloth is listed at $1.50. It appears that the thing essentially is a treatise devoted to the puffing of a device called the "Thermalaid," a rectal dilator with a rheostat attachment, sold by the Electro Thermal Company of Steubenville, Ohio. Incidentally, the publisher's statement shows that the book is issued from Steubenville, Ohio.

As has already been stated, Taylor sells an alleged douche medicament which used to be called Vagitone, and under that name was put out by the Hygienic Orificial Company, which in its advertising matter sometimes gave its address as 361 West Superior Street, Chicago, and sometimes as 711 Sedgwick Street—two addresses for different entrances to the same building. A few weeks ago, a visit to 361 West Superior Street disclosed that the Hygienic Orificial Company was gone and, apparently, had left no forwarding address. It appears now that M. Sayle Taylor does business from 2029 North Halstead Street, Chicago, under the name La-Fon Laboratories, Inc., said to be successors to the Hygienic Orificial Company, Inc. Further, as has already been stated, the name of his product has been changed from Vagitone to La-Fon.

Recently, M. Sayle Taylor was working Virginia and a telegram was received from a gentleman in Lynchburg, asking for information on this person, who was scheduled for a week's "lectures" in that city. The information was sent and we now learn that Taylor was not permitted to put on his "show." It will be interesting to see just how long Taylor will be able to continue in his present field of endeavor.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CARDIAC MANIFESTATIONS IN SYPHILIS

To the Editor:—A white man, aged 41, a painter, well developed and nourished, and apparently in excellent health, came to me, Nov. 23, 1931, because of a skin condition over the region of the right temple. This was attributed to a scratch from a barber's comb received about a year ago. Shortly after, a purplish rash developed on the left forearm and persisted. The lesions did not cause symptoms, but because they did not disappear I was consulted. Other than the fact that the patient indulges moderately in beer and alcoholic beverages, and is an inveterate tobacco chewer, the history is entirely irrelevant. Examination revealed an indurated papular lesion over the right temple extending on to the pinna of the ear, and a tuberoserpiginous lesion on the left forearm and on the right nates. An enlarged left epitrochlear gland was palpable, but no other abnormalities were noted. The heart was regular, with a rate of 80 beats a minute; the blood pressure was 128 systolic and 80 diastolic; no murmurs or other adventitious sounds were heard. While there were no viscereal signs evident, a presumptive diagnosis of a tertiary syphilid was made. A Wassermann reaction ascertained by the board of health was reported as 4 plus. Treatment was begun, 1.5 cc. of a bismuth compound being given intramuscularly on November 30 and December 2, 8 and 15. This was alternated with neoarsphenamine intravenously, 0.45 Gm. on December 5 and 12, which was tolerated well. December 19, 0.6 Gm. of arsphenamine was administered intravenously with apparently no immediate ill effects. About twelve hours later the patient began to experience a "jumpy" sensation around the heart, which occurred rather frequently but did not interfere with his work. Examination revealed a marked degree of irregularity with extrasystoles and superimposed beats. The blood pressure was 130 systolic and 70 diastolic. No more neoarsphenamine was given, and the patient is now on a regimen of iodides and mercury and bismuth preparations. The cardiac irregularity persists at the present writing. Would you consider the development of the cardiac signs as evidence of a latent syphilitic myocarditis, activated by the arsenical? What effect would nicotine through the use of chewing tobacco have on the heart? What course of treatment would you outline in view of the condition that has developed? Would you kindly furnish references in the literature pertinent to the development of cardiac irregularities after the use of arsphenamine? Please omit name.

M.D., New York.

ANSWER.—Syphilitic aortitis is a frequent complication of late syphilis. The information provided in the query as to the patient's physical status before treatment omits two or three important points on which the diagnosis depends. In a patient with known late syphilis, the presence of any three of the following criteria is strong evidence in favor of the diagnosis of syphilitic aortitis: (1) teleroentgenographic and fluoroscopic evidence of aortic dilatation, (2) increased retromanubrial dulness, (3) a history of circulatory embarrassment, (4) a tympanitic bell-like tambour accentuation of the aortic second sound, (5) progressive cardiac failure, (6) substernal pain and (7) paroxysmal dyspnea. Syphilitic myocarditis is probably rare, the myocardial changes that occur in patients with syphilitic heart disease being usually due to the mechanical effects of circulatory embarrassment.

The occurrence of persistent extrasystoles after several injections of neoarsphenamine suggests that the patient may have an unrecognized syphilitic aortitis, and it would be safer to treat the patient as if this diagnosis were definite. This is in spite of the fact that the excessive use of chewing tobacco may cause ventricular extrasystoles as readily as excessive smoking.

In view of the presumptive diagnosis of syphilitic aortitis, it would be advisable to keep the patient on bismuth preparations and potassium iodide for two or three months before any effort is made to give further arsenical drugs. When arsenical drugs are resumed, either neoarsphenamine or sulpharsphenamine bismuth may be used. The dose of neoarsphenamine should not exceed 0.45 Gm. Further treatment should be carried on as outlined in a paper by J. E. Moore and J. H. Danglade on the treatment of cardiovascular syphilis (*Am. Heart J.* **6**:148 [Oct.] 1930). A fluoroscopic and teleroentgenographic examination of the cardiovascular stripe should be done promptly. The further use of alcohol and tobacco should be prohibited.

Cardiac irregularities after the use of the arsphenamines are uncommon and usually occur in patients with preexisting cardiovascular syphilis. The following references may be consulted:

Reid, W. D.: The Mechanism of the Toxic Action of Arsphenamine on the Heart, THE JOURNAL, March 21, 1925, p. 883.

Wilson, F. N.; Wile, U. J.; Wishart, S. W., and Herrmann, G. R.: Changes in the Electrocardiogram Following the Arsphenamine Treatment of Cardiac and Aortic Syphilis, *Proc. Soc. Exper. Biol. & Med.* **23**: 275, 1926.

DIGESTIBILITY OF COW'S MILK

To the Editor:—Is there a test which can be applied to a cow's milk to determine how digestible that certain milk is? If so, what is the test, how is it made and just how dependable is it? An intelligent dairyman stated that Dr. Abt of Chicago had recommended the test and that herds had been accumulated all the cows of which gave milk that was easily digested. He also stated that such cows gave such milk throughout their entire lives. He was contemplating getting several cows of this sort and advertising their milk for babies only. The cows he already has are all Jerseys and give a milk high in butter fat and for that reason I have not recommended his milk for my feeders. If such cows do exist, would it be safe to feed a baby a milk with a high butter fat content? I must say that this is all new to me in spite of the fact that I have been doing pediatric work for years and try my darndest to keep in sight of the parade at least. Please omit name.

M.D., Arkansas.

ANSWER.—There is probably no satisfactory test that can be applied to cow's milk to determine its digestibility. Cow's milk derived from the various races of animals differs in the quantity of fat as well as in protein content.

Van Slyke and Publow give the following analyses: Jersey milk contains 5.78 per cent fat; Guernsey, 5.38 per cent; Ayrshire, 3.76 per cent; Holstein, 3.26 per cent. In addition to this the fat globules in Holstein and Ayrshire milk are small, while those of Guernsey and Jersey milk are considerably larger. The digestibility of the milk in all probability does not depend on these factors alone.

In this connection, however, the bulletin of the Utah Agricultural Experiment Station for June, 1928, written by R. L. Hill, calls attention to an apparatus for measuring curd tension, which is a measure of toughness or softness of the milk curd. Hill believes that he found by this method a plan for determining the digestibility of cow's milk by babies. He believes that the milk with a low curd tension is more readily digested than the milk with a high curd tension, and he observes further that, after having examined many breeds of cattle, all show both extremes in curd tension. He assumes that the curd character of the milk is not a breed characteristic. However, a larger percentage of some breeds give soft curded milk than others. He also thinks that the presence of butter fat in milk tends to soften the curd, and that the fat content of the milk is not an index of its curd character. It is generally agreed that boiling milk increases its digestibility.

It seems fair to assume, however, that the mere softness or hardness of the milk curd will not completely solve the problem of digestibility of cow's milk. The digestive ferments of the infant have been planned to digest breast milk and consequently there may be occasional difficulties on the part of the baby in the digestion of any foreign milk. The digestion of the infant will always depend on the proper development of the necessary ferments in quantity and quality, and its tolerance for food will depend on a sufficient quantity of ferments and on the rapidity of their action.

But, in addition, there are well authenticated cases of cow's milk idiosyncrasies manifested by shock, pallor, vomiting, fever and diarrhea; also skin eruptions, such as urticaria, edema and even purpura. Whether such manifestations would be increased by hard curd or diminished by soft curd is doubtful. It is more reasonable to think that these untoward allergic symptoms depend on a foreign protein reaction.

In the evolution of infant feeding, cow's milk has been peptonized, citrated, precipitated with rennin and reemulsified, and in spite of all these measures some babies have failed to thrive on these foods. In other words, the digestibility of cow's milk, as has just been pointed out, depends on the physiologic function of the baby's digestive tract as well as on the physicochemical characteristics of the milk.

TOXIC EFFECTS FROM DUCO

To the Editor:—I should like some information as to the toxic effect of Duco paint and if there have been any cases reported of toxic amblyopia as an occupational disease among Duco painters. Any literature on this subject that you may cite will be appreciated.

J. W. SHELTON, M.D., Oklahoma City.

ANSWER.—The term "Duco" properly applies only to certain products of the du Pont Company. The exact composition of these coatings is not widely known. Duco consists largely of the acetates of amyl, butyl and ethyl with the diluents denatured alcohol, toluene, butyl alcohol and amyl alcohol. As regards the health features, Duco is not generally different from pyroxylin lacquers that have been in use for many years. A number of cases of poisoning from the use of Duco are mentioned in medical literature. The references follow:

Minnesota Med. J. **9:** 703 (Oct.) 1928.
South. M. & S. J. **90:** 752 (Nov.) 1928.

It is probable that a much greater variety of solvents, thinners and other ingredients enter into some coatings. The following substances have been found in coatings of this general character: methyl (wood) alcohol, isopropyl alcohol, diacetone alcohol, acetone, isopropyl acetate, glycols, lactates, benzene, toluene, xylene, naphtha, tricresyl phosphate and others. Manifestly, methyl alcohol, and to a lesser degree ethyl alcohol, may produce a toxic amblyopia, given sufficient exposure to intake by mouth, lungs or skin. The most likely source of current information is the Committee on Volatile Solvents of the American Public Health Association, which may be approached through its chairman, Dr. Elizabeth B. Bricker, Department of Labor, Harrisburg, Pa.

PERIPHERAL NEURITIS AFTER ARSPHENAMINE

To the Editor:—A man, aged 60, had papulomacular eruptions of secondary syphilis. The Wassermann and Kahn reactions were both 4+. He was given immediately neoarsphenamine, two treatments of 0.6 Gm. and four treatments of 0.9 Gm., followed with ten injections of a mercury compound. Just before the beginning of the mercury treatment he complained of tingling in the finger tips of both hands, more severe on extension of the hand and arm, together with some anesthesia of the palmar surfaces of the fingers. He was in today for a mercury treatment and the symptoms are more noticeable, with extension along the course of the radial nerve in both forearms. He also complained of numbness of the second and third toes on both feet. These symptoms are not severe enough to incapacitate the patient, but they are annoying and seem to be getting progressively worse. There is no Argyll Robertson pupil, the Romberg sign is positive, and the reflexes are normal except that in the right leg they are slow and sluggish. The patient says that the right foot bothers him more than the left. Could the central nervous system become involved at this stage with vigorous treatment with involvement of the posterior roots? Could this be a neuritis due to arsenic from the treatment? As I understand it, secondary lesions of syphilis, early after primary infection, as in this case, are evidence of spirochetal septicemia. If this is true, it seems that the neoarsphenamine would have prevented the central nervous system involvement this early. Please inform me on this case as to diagnosis and treatment. Please omit name and address.

M.D., Kentucky.

ANSWER.—Peripheral neuritis from arsphenamine is rare but it does occur and the history given indicates it. Antisyphilitic treatment should be suspended and sodium thiosulphate given intravenously daily, in increasing doses beginning with 0.1 Gm. and increasing to 1 Gm. When this dose is reached the treatment should be given only every second day. If not well borne, it should be stopped. The U. S. P. drug should be employed. After several weeks of such treatment, iodides should be given for several weeks, or they can be given at the same time as the injections of the sodium thiosulphate. The parts affected should be kept at rest as nearly as possible, with some form of counter-irritation along the affected nerves. After the symptoms of nerve involvement have disappeared, which may take a long time, antisyphilitic treatment should consist of alternating courses of mercury and bismuth compounds, arsphenamine being avoided. Treatment should be mild. Patients of 60 cannot stand the strenuous treatment appropriate for younger ones.

SINUSITIS AND DEAFNESS AS BASIS FOR COMPENSATION

To the Editor:—A man contracted sinusitis during army service. This has continued and lately he has been in poor condition. Please advise me whether the sinusitis would be a probable cause for the deafness, which has gradually developed, and whether it could cause a valvular heart condition or aggravate a previously existing but unknown lesion. Should he be entitled to compensation only for sinusitis, service connected, or should he also claim compensation for either or both of the other conditions as indirectly service connected by reason of a causative factor in the sinusitis?

H. F. CURTIS, M.D., Concord, N. H.

ANSWER.—This sinusitis, which must have persisted for at least thirteen years as it was contracted in the army service, could be the cause of deafness of a catarrhal type. Such deafness, however, is seldom profound, and, should examination of hearing function reveal that the cause of the deafness lies in an involvement of the internal rather than of the middle ear, the chronic sinusitis is probably not the cause. There is a great deal of debate as to whether or not suppuration in the accessory nasal sinuses may act as a focus of infection. The better conservative opinion inclines to the belief that these lesions do not act nearly as often in this capacity as do others, namely, those about the roots of teeth and in the tonsils. It is possible but not probable that a valvular heart condition either springs from or is aggravated by chronic suppurative sinusitis. This individual is certainly entitled to compensation for sinusitis, service connected, and he may be entitled to compensation for the valvular heart condition, but it is highly questionable whether he should be compensated for the latter on the basis that it springs from or is aggravated by the former.

X-RAY DERMATITIS OF SCROTUM

To the Editor:—What effect may result from an x-ray burn on the scrotum? The x-rays were used for the sole purpose of preventing conception. The patient is a man, aged 50. Please omit name.

M.D., Indiana.

ANSWER.—If the radiodermatitis is of the acute type and of the third degree, it may be associated with severe pain and result in an indolent ulcer. If the ulcer is small, it may heal spontaneously in a few months or a year. If it is large, it may never heal and eventually give rise to malignant cancer. An acute burn of the first or second degree may give rise eventually to x-ray sequelae such as atrophy, telangiectasia and keratoses, and the latter may give rise to malignant cancer. Depending on the amount of x-rays administered, the sterility may be temporary or permanent.

If the radiodermatitis is of the chronic type consisting of x-ray sequelae such as atrophy, telangiectasia and keratoses, the latter may give rise to malignant cancer in anywhere from a few months to twenty years. So-called x-ray skin (chronic radiodermatitis) may at any time ulcerate. Such ulcers may heal spontaneously or they may become indolent and eventually change to malignant cancer.

DANGER FROM HYDROGEN CYANIDE

To the Editor:—I should like to know the danger of hydrocyanic acid formation or any other attendant health hazard from the following procedure: Small steel parts are washed in a 20 per cent sulphuric acid, electrolytic bath, from 2 to 8 volts and from 3 to 5 amperes being used. It has been suggested that these parts be transferred to an electrolytic bath of from 1.25 to 3 per cent sodium cyanide at 180 F. It would seem as though there is definite danger of hydrogen cyanide formation from this bath despite the efficient blower system installed. If this danger exists, would an intermediate bath of hot or cold water or alkali, or combination of both avert this menace? Please use initials only.

M.D., Connecticut.

ANSWER.—The amount of sulphuric acid carried over from the first to the second bath will largely determine the amount of hydrogen cyanide formed. In the absence of acid, traces of hydrogen cyanide may be formed by hydrolysis, but the amount so produced ordinarily will be taken care of by an efficient blower. Between the two baths, the steel parts should be washed one or more times with hot alkali solutions. It is possible that hot sodium carbonate solutions may serve this purpose. This introduces another but lesser hazard from the sodium carbonate, which is a skin irritant. Sodium bicarbonate solutions are preferable for this purpose, if no industrial incompatibility arises. At any rate, no sulphuric acid should be carried over into the sodium cyanide electrolytic bath.

TRAUMATIC MASTOIDITIS

To the Editor:—Kindly advise me as to the incidence of traumatic mastoiditis. I was called to see a girl, aged 10 years, who was injured, Nov. 13, 1931, by a ladder falling from a roof. The ladder struck her on the left side of the head over the temporal region. Since the injury the child has had attacks of dizziness and violent headaches on the left side. January 6, the left ear began to discharge. Headache and dizziness are still present. There is extreme tenderness over the mastoid antrum, with sagging of the postsuperior canal wall. There is no evidence or history of any preceding sore throat, cold or infection of the upper respiratory tract. I should greatly appreciate some data on this problem.

M.D., Mass.

ANSWER.—Traumatic mastoiditis in civil life does not occur often, though a number of cases have been reported of mastoiditis following injury of one sort or another. The condition then is often comparable to that of an osteomyelitis in other parts of the body following injury, as noted in the extremities, for instance. After the suppurative process in the mastoid has begun, infection may extend by way of the mastoid antrum and aditus ad antrum into the middle ear and give rise to symptoms of acute otitis media. On the other hand, the process may remain limited to the mastoid bone itself without visible changes of hearing. When definite signs and symptoms of involvement of the mastoid process are present, the operative procedure would be the same as when due to some infection extending to the mastoid cells from the middle ear.

DICK TEST FOR IMMUNITY TO SCARLET FEVER

To the Editor:—Since reading of the work of Rhoads on scarlet fever immunization (THE JOURNAL, July 18, 1931) in which he used the five dose scarlet fever toxin preparations approved by the Scarlet Fever Committee, I have been advocating immunization by this method. Some of the local physicians do not approve of it, and I have met considerable opposition since I have recommended this method of immunization. I have read the literature on the subject, and all the reports that I have found have been favorable. Have there been any unfavorable reports as to severe reactions from these approved preparations or as to failures to produce immunity? Is there any doubt at present that the Dick test is a reliable indicator of immunity to scarlet fever?

R. K. SCHMITT, M.D., Columbus, Ind.

ANSWER.—There have been no unfavorable reports as to the results of immunization against scarlet fever by injection of the five graduated doses of the scarlet fever toxin as described in the Rhoads article. There is no doubt that the Dick test correctly made with accurately standardized toxin and observed between twenty and twenty-four hours after the intradermal injection is a reliable indicator of immunity to scarlet fever.

TREATMENT OF LATE SYPHILIS

To the Editor:—A man, now about 60, contracted syphilis from thirty to thirty-five years ago. It was not diagnosed or treated. There is no history of symptoms until about four months ago, when two cutaneous gummas appeared. He consulted me three weeks ago with ulcers where the gummas had broken down, and a 4+ Wassermann reaction. His nervous system and heart are apparently normal; the kidneys are not so good; the arteries are sclerotic, and the teeth and gums are very bad. On potassium iodide, 15 grains (1 Gm.) three times a day, the ulcers have healed. I have referred him to a dentist. What different treatment, if any, is indicated? What is your opinion of bismarsen? Please omit name.

M.D., Connecticut.

ANSWER.—A man, aged 60, with some kidney impairment must be treated with extra caution. As soon as the tooth infection is cleared up, more active treatment should be given, either mercury or bismuth compounds with small doses of arsphenamine, neoarsphenamine or sulpharsphenamine bismuth (bismarsen). The latter is a valuable and reliable antisyphilitic, suitable for the case in question. The same reactions as are seen with the other forms of arsphenamine must be watched for, and in a patient of this age the state of the kidneys, liver and heart is to be carefully watched. The treatment should be mild.

ETHER IN WHOOPING COUGH

To the Editor:—May I receive information as to the dosage of ether in olive oil, by rectum, the frequency of application, and contraindications, in whooping cough? In the coughs of children, is papaverine more sedative than codeine? Please omit name.

M.D., New York.

ANSWER.—Equal parts of ether and olive oil are employed except in patients under 1 year of age, when a mixture of 1 part of ether and 3 parts of oil is given. The usual dose is 2 cc. of ether for each year of apparent age, given two, three or even four times daily through an 18 or a 20 (French) rubber catheter for from five to twelve days, according to the response of the patient. Desire to defecate is antagonized by pressure against the anus and elevation of the hips. If, in spite of these precautions, the child defecates within thirty minutes after the injection, the dose is repeated. No contraindications have been noted.

Codeine is more sedative than papaverine in coughs.

LUPUS ERYTHEMATOSUS

To the Editor:—A boy, aged 8 years, had his whole face sunburned two years ago. The parents noticed six months after the burn that, although the face was normal in appearance, the nose was rough. He has been seen by several physicians and treated with salicylic acid, fractional doses of x-rays, and so on. Treatment has had no effect on the lesion. The lower half of the nose is affected in a geographic manner. The skin has a rough appearance, but no scales are present. The color is slightly darker than the normal skin. There are no other lesions on any part of the body. What would be the probable diagnosis and what treatment advisable? Please omit name.

M.D., Texas.

ANSWER.—The onset after sunburn, location on the nose, roughness without scales and the "geographic" outline suggest a mild lupus erythematosus. The patient should be seen by a skin specialist and a definite diagnosis made made before any treatment is undertaken.

USE OF PHENOL IN NOSE

To the Editor:—My attention has been called to the harmful effects of phenol on the mucous membranes of the nose. The phenol was used as a nasal spray in the strength of approximately 0.5 per cent. Are there any harmful effects to be expected from phenol in this strength, and if so, what are they? Please omit name and city.

M.D., Michigan.

ANSWER.—Apparently, no definitely harmful effect on the nasal mucous membrane from the use of 0.5 per cent phenol has been noted. As a matter of fact, for many years the late Dr. Sluder of St. Louis used instillations of 0.5 per cent phenol in oil and claimed that only beneficial effects were obtained thereby. Phenol is freely soluble in glycerin and is not precipitated; but when it is dissolved in oil and then allowed to stand, there is some danger of precipitation, so that the lower portion of the solution is more concentrated and might be irritating. It is best, therefore, when administering an oily solution to shake it before using.

"HATBAND" DERMATITIS

To the Editor:—Please inform me whether or not there is any remedy for the so-called hatband dermatitis. For several years I have been seriously annoyed by an itching eruption across my forehead, caused by wearing a hat, and cured only by leaving off hats altogether for a month or more. The area affected, when at its worst, is dry, scaly, red, and covered with very small hard pimples. Lining a hat with cloth aids, but does not prevent, the trouble. My age is 55. Please omit name.

M.D., Illinois.

ANSWER.—Lining the hat with cloth may fail to bring relief because of perspiration carrying the irritating substance through the cloth. If a small piece of the hatband is fastened on the normal skin for forty-eight hours, a person who is sensitized to this leather will possibly present a patch of dermatitis; or it may be necessary to test the skin of the forehead. Fractional doses of x-rays, one-fourth erythema dose once a week, will hasten the cure of the dermatitis. Then ultraviolet rays should be used until the skin is well tanned. Then a hat with a band made of a different kind of leather should be worn.

USE OF CONVALESCENT WHOLE BLOOD IN MEASLES

To the Editor:—How efficacious and how lasting is the prophylactic treatment of measles by the intramuscular injection of whole blood from an adult or a convalescent patient?

H. C. LIU, M.D., Honolulu, Hawaii.

ANSWER.—Most reports are favorable as to the effectiveness of prophylactic injections of whole blood from convalescent measles patients or normal adults who previously have had measles. Blood from convalescent patients gives somewhat better protection than blood from normal adults. From 96 to 98 per cent protection may be obtained by the use of pooled convalescent serum or whole blood, if given within five days after exposure. The passive immunity procured from such injections is transient, lasting from two weeks to two months. If blood is given between the fifth and the eighth day after exposure a modified form of measles generally results, usually not followed by complications. The immunity following an attenuated attack of measles is probably permanent.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: New Orleans, May 9. Montreal, Sept. 19. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: Written examinations will be held in nineteen cities of the United States and Canada, March 26. The general, oral and clinical examination will be held in New Orleans, May 10. Sec., Dr. Paul Titus, 1015 Highland Building, Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: New Orleans, May 9. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARIZONA: Phoenix, April 5-6. Sec., Dr. B. M. Berger, 12 N. Central Ave., Phoenix.

COLORADO: Denver, April 6-9. Sec., Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT: *Endorsement.* Hartford, March 22. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden.

IDAHO: Boise, April 5. Comm. of Law Enforcement, Hon. Emmitt Pfost, Boise.

ILLINOIS: Chicago, April 12-14. Supt., Mr. Paul B. Johnson, Springfield.

MINNESOTA: *Basic Science.* Minneapolis, April 5-6. Sec., Dr. J. C. McKinley, 125 Millard Hall, University of Minnesota, Minneapolis. *Regular.* Minneapolis, April 19-21. Sec., Dr. E. J. Engberg, 524 Lowry Bldg., St. Paul.

MONTANA: Helena, April 5. Sec., Dr. S. A. Cooney, Power Block, Helena.

NEW MEXICO: Santa Fe, April 11. Sec., Dr. P. G. Cornish, Jr., 221 W. Central Ave., Albuquerque.

RHODE ISLAND: Providence, April 7-8. Dir., Dr. Lester A. Round, 319 State Office Building, Providence.

TENNESSEE: Memphis, March 23-24. Sec., Dr. Alfred B. DeLoach, Medical Arts Bldg., Memphis.

WEST VIRGINIA: Charleston, March 22. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: *Basic Science.* Madison, March 19. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. *Reciprocity.* Milwaukee, April 6. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., LaCrosse.

New York June Report

Mr. Herbert J. Hamilton, chief, Professional Examinations, reports the oral and written examination held at Albany, Buffalo, New York and Syracuse, June 22-25, 1931. The examination covered 9 subjects and included 10 questions. An average of 75 per cent was required to pass. Six hundred and seventy candidates were examined, 585 of whom passed and 85 failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
University of Colorado School of Medicine		(1927)	1
Yale Univ. School of Med.		(1928, 2), (1930, 2), (1931, 2)	6
Georgetown University School of Med.		(1930, 7), (1931, 13)	20
George Washington Univ. Med. Sch.		(1929), (1930), (1931, 5)	7
Howard University School of Medicine		(1930, 2)	2
Emory University School of Medicine		(1928)	1
Loyola University School of Medicine		(1930, 3), (1931, 3)	6
Rush Medical College		(1929), (1930), (1931, 4)	6
University of Louisville School of Med.		(1930), (1931, 3)	4
University of Maryland School of Medicine and College of Physicians and Surgeons		(1930, 3), (1931, 7)	10
Boston University School of Medicine		(1930), (1931, 2)	3
Harvard University Medical School		(1929), (1931)	2
Tufts College Medical School		(1927), (1929, 2), (1931, 10)	13
University of Michigan Medical School		(1931)	1
St. Louis Univ. School of Med.		(1929), (1930, 2), (1931)	4
University of Nebraska College of Medicine		(1929)	1
Albany Medical College		(1928), (1930), (1931, 17)	19
Columbia University College of Physicians and Surgeons		(1930, 4), (1931, 42)	46
Cornell Univ. Medical College		(1929), (1930, 6), (1931, 29)	36
Long Island College of Medicine		(1930, 4), (1931, 66)	70
New York Homeo. Med. Coll. and Flower Hosp.		(1931, 68)	68
Syracuse University College of Medicine		(1930), (1931, 28)	29
Univ. and Bellevue Hosp. Med. Coll.		(1930, 2), (1931, 105)	107
University of Buffalo School of Medicine		(1930), (1931, 59)	60
University of Rochester School of Medicine		(1931, 11)	11
University of Oklahoma School of Medicine		(1931)	1
Hahnemann Medical College of Philadelphia		(1929), (1930, 2)	3
Jefferson Med. Coll. of Philadelphia		(1929), (1930), (1931, 4),	6
Temple University School of Medicine		(1930)	1
University of Pennsylvania School of Medicine		(1930)	1
Woman's Medical College of Pennsylvania		(1931)	1
University of Tennessee College of Medicine		(1931)	1
University of Vermont College of Medicine		(1931)	1
University of Virginia Department of Medicine		(1930)	1
University of Alberta Faculty of Medicine		(1928)	1
Dalhousie University Faculty of Medicine		(1929)	1
Queen's University Faculty of Medicine		(1929)	1
Univ. of Toronto Fac. of Med.		(1928, 3), (1929, 2), (1930, 2)	7
University of Western Ontario Medical School		(1928)	1
McGill Univ. Fac. of Med.		(1924), (1929), (1930), (1931, 2)	5
Catholic University of Louvain Faculty of Medicine		(1926)	1
Member of the Royal College of Surgeons, England		(1926)	1
University of Athens School of Medicine		(1924)	1
University of Budapest Faculty of Medicine		(1917)	1
Royal Univ. of Bologna Faculty of Med. and Surg.		(1928)	1
University of Portugal Faculty of Medicine		(1925)	1
American University of Beirut School of Med.		(1927), (1929)	2
Osteopaths			12

College	FAILED	Year Grad.	Number Failed
Georgetown Univ. Sch. of Med.		(1929, 2), (1930, 6), (1931, 3)	11
Howard University School of Medicine		(1929), (1930)	2
University of Louisville Sch. of Med.		(1926), (1927), (1930)	3
Boston University School of Medicine		(1930)	1
Tufts College Medical School		(1928), (1929), (1930)	3
Detroit College of Medicine and Surgery		(1928)	1
University of Nebraska College of Medicine		(1928)	1
Albany Medical College		(1931, 3)	3
Cornell University Medical College		(1931, 3)	3
Long Island College of Medicine		(1931)	1
N. Y. Homeo. Med. Coll. and Flower Hosp.		(1914), (1931, 8)	9
Syracuse University College of Medicine		(1931, 3)	3
University and Bellevue Hospital Medical College		(1931)	1
University of Buffalo School of Medicine		(1931, 2)	2
Temple University School of Medicine		(1931)	1
University of Pennsylvania School of Med.		(1928), (1929)	2
Queen's University Faculty of Medicine		(1930, 2)	2
University of Toronto Faculty of Medicine		(1923)	1
McGill University Faculty of Medicine		(1928)	1
Karl Franzens Univ. Faculty of Med., Graz		(1927), (1928)	2
University of Vienna Faculty of Medicine		(1926),* (1930)*	2
Catholic University of Louvain Faculty of Medicine		(1930)*	1
University of Paris Faculty of Medicine		(1931)*	1
University of Freiburg Faculty of Medicine		(1926)	1
University of Jena Faculty of Medicine		(1925)	1
National University of Ireland Faculty of Medicine		(1931)*	1
Royal University of Catania Faculty of Medicine		(1921)	1
Royal University of Modena Faculty of Med. & Surg.		(1921)	1
Royal University of Naples Faculty of Medicine and Surgery		(1923), (1924, 2), (1925, 2),* (1929)*	6
Royal Univ. of Palermo Faculty of Med. and Surg.		(1928)*	1
Royal University of Pavia Faculty of Med. and Surg.		(1921)	1
Royal University of Rome Faculty of Medicine and Surgery		(1925), (1927), (1930)*	3
Moscow State University Faculty of Medicine		(1920)*	1
Osteopaths			11

Mr. Hamilton also reports 179 physicians licensed by endorsement from May 1 to Dec. 1, 1931. The following colleges were represented:

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
College of Medical Evangelists		(1931)	N. B. M. Ex.
Stanford University School of Medicine		(1921)	Oregon
University of Colorado School of Medicine		(1928)	N. B. M. Ex.
Yale University School of Medicine		(1921)	Connecticut, (1928) Indiana, (1929, 2), (1930) N. B. M. Ex.
Georgetown University School of Medicine		(1922)	Dist.Colum., (1924) Minnesota, (1930) New Jersey
George Washington University Medical School		(1930)	Maryland
Howard University School of Medicine		(1928)	New Jersey, (1930) Maryland, Maryland, Virginia
Atlanta College of Physicians and Surgeons, Georgia		(1913)	Georgia
Emory University School of Medicine		(1923)	Georgia
Hahnemann Medical College and Hospital, Chicago		(1898)	Connecticut
Northwestern University Medical School		(1902)	Illinois
Indiana University School of Medicine		(1928), (1929)	Indiana
State Univ. of Iowa Coll. of Med.		(1920), (1929), (1930, 2)	Iowa
University of Louisville School of Medicine		(1924)	Kentucky, (1930, 2) N. B. M. Ex.
Tulane University of Louisiana School of Medicine		(1925)	Alabama, N. B. M. Ex., (1929) North Carolina
Johns Hopkins University School of Medicine		(1923)	Tennessee, (1915), (1920), (1927), (1930), (1931) Maryland, (1927), (1928), (1929) N. B. M. Ex.
Maryland Medical College, Baltimore		(1904)	Porto Rico
University of Maryland School of Medicine		(1910)	Maryland
University of Maryland School of Medicine and College of Phys. & Surgs.		(1918), (1931, 2)	Maryland, (1928) California
Boston University School of Medicine		(1923)	New Jersey
Harvard University Medical School		(1911)	California, (1920) Georgia, (1903), (1914), (1923) Massachusetts, (1928) New Jersey, (1924), (1925), (1928, 4), (1930) N. B. M. Ex.
Tufts College Medical School		(1926)	N. B. M. Ex., (1927) New Jersey, (1928) Maryland
University of Michigan Dept. of Med. and Surg.		(1911)	Michigan
University of Michigan Medical School		(1921)	Michigan, (1930) N. B. M. Ex.
University of Minnesota Med. Sch.		(1913), (1916), (1924)	Minnesota
St. Louis University School of Medicine		(1927)	California, (1929) Tennessee
Washington University School of Medicine		(1922)	Virginia, (1924) Missouri
Columbia University College of Physicians and Surgeons		(1924), (1929)	New Jersey, (1927), (1928, 3), (1929, 3), (1930, 2) N. B. M. Ex.
Cornell University Medical College		(1923)	Connecticut, (1929, 4), (1930) N. B. M. Ex.
Fordham University School of Medicine, New York		(1911)	New Jersey
Long Island College Hospital		(1912)	New Jersey, (1928) N. B. M. Ex.
Syracuse University College of Medicine		(1921)	Porto Rico, (1929) N. Carolina, (1928), (1930) N. B. M. Ex.
University of North Carolina School of Med.		(1906)	N. Carolina
Eclectic Medical College, Cincinnati		(1919)	Ohio
Ohio State University Coll. of Med.		(1923), (1925), (1927)	Ohio
University of Cincinnati College of Med.		(1927), (1930, 3)	Ohio
Western Reserve University School of Med.		(1929)	N. B. M. Ex., Ohio
University of Oklahoma School of Medicine		(1928)	Ohio
University of Oregon Medical School		(1930)	N. B. M. Ex.
Hahnemann Med. College and Hosp. of Philadelphia		(1930)	Maryland
Jefferson Medical College of Philadelphia		(1910), (1923)	Penna., (1930) New Jersey
Medico-Chirurgical College of Philadelphia		(1899), (1916)	Penna.
University of Pennsylvania Dept. of Med.		(1899), (1902)	Penna.

University of Pennsylvania School of Medicine.....(1920) Penna., (1925) Minnesota
University of Pittsburgh School of Medicine.....(1909) Penna.
Woman's Medical College of Pennsylvania.....(1909) Penna.
Meharry Medical College.....(1930) Tennessee
University of Tennessee Coll. of Med.....(1929, 2), (1930, 2) Tennessee
Vanderbilt University School of Medicine.....(1903) Tennessee
Baylor University College of Medicine.....(1930) Texas
University of Vermont College of Medicine.....(1881) Florida, (1918) Connecticut, (1926, 2), (1930, 2) N. B. M. Ex.
Medical Coll. of Virginia..(1923), (1926), (1928), (1929, 2) Virginia, (1926) Maryland
University of Virginia Dept. of Med.(1925), (1928), (1929)N. B. M. Ex., (1929, 2) Virginia
Queen's University Faculty of Med....(1905) Mass., (1924) Idaho
University of Toronto Faculty of Med.....(1920), (1925) Canada, (1927) California, (1928, 2) N. B. M. Ex.
University of Western Ontario Medical School.....(1924) Canada
McGill University Faculty of Medicine.....(1925) New Jersey
Carl Ferdinand University Faculty of Med., Austria..(1918)* Diploma
Karl Franzens University Faculty of Med., Austria..(1902) Diploma
University of Vienna Faculty of Medicine..(1904),* (1923)* Diploma
German University of Prague Faculty of Medicine....(1922) W. Virginia
University of Birmingham Faculty of Medicine.....(1924) England
University of London Faculty of Medicine.....(1914)* England
University of Paris Faculty of Medicine.....(1896) Mass.
University of Berlin Faculty of Medicine.....(1923) Germany
University of Göttingen Faculty of Medicine.....(1922) Wisconsin
Royal Hungarian Elizabeth Univ. Faculty of Med...(1925) Diploma
University of Budapest and Royal Hungarian University of Science.....(1898), (1917) Diploma
Licentiate of the Royal College of Physicians and Fellow of the Royal College of Surgeons, Ireland..(1910) Ireland
Royal Univ. of Bologna Faculty of Med. and Surg...(1926)*New Jersey
University of Tomsk Faculty of Medicine.....(1919)* Mass.
University of Edinburgh Faculty of Medicine.....(1922) Diploma, (1928, 2) N. B. M. Ex.
University of Barcelona Faculty of Medicine.....(1907)* Porto Rico
University of Berne Faculty of Medicine.....(1931) Maryland
University of Geneva Faculty of Medicine.....(1913) Diploma
American University of Beirut School of Medicine...(1911) Mass.

* Verification of graduation in process.

Book Notices

Tumors of Bone. By Charles F. Geschickter, M.D., Surgical Pathological Laboratory, Department of Surgery, Johns Hopkins Hospital and University, and Murray M. Copeland, M.D., Memorial Hospital, New York City. With forewords by Dean Lewis, M.D., Professor of Surgery, Johns Hopkins Hospital and University, and Joseph Colt Bloodgood, M.D., Clinical Professor of Surgery, Johns Hopkins Hospital and University. Cloth. Price, $5. Pp. 709, with 406 illustrations. New York: American Journal of Cancer, 1931.

This is the first book published under the auspices of the *American Journal of Cancer*. It is a welcome visitor and, it is hoped, will be the precursor or forerunner of others. The volume reflects many of the teachings of the authors' great teacher, Bloodgood, who gave them the opportunity and material. The work covers completely the field of bone tumors and is based on a study of more than 3,600 cases. It gives in detail the clinical picture, roentgenologic features, prognosis, treatment and pathology of the various neoplastic entities. A separate complete chapter is devoted to each type of tumor. Special emphasis is placed on differential diagnosis and the interpretation of roentgenograms. A summary is included in every chapter. The illustrations serve as an atlas of bone tumors. In the foreword, by Dean Lewis, the statement is made that in any case in which a mutilating operation is to be performed a biopsy should be made. If there is any doubt, final judgment should be reserved until the best section that can be prepared is carefully and competently studied. In the second part, Bloodgood states his rules of procedure in regard to bone tumors. The authors emphasize the relationship between bone development and tumor formation, and it will be found that the clinical entities described rest on the type and phase of tissue differentiation represented by the new growths.

The authors state that approximately half of all the primary neoplasms of the bone are related to precartilaginous connective tissue. This combination or transition from connective tissue to cartilage and to bone, seen in all these tumors, not only repeats the sequence by which the skeleton is derived in the embryo but recalls the order of development of the spine in vertebrates and demonstrates effectively the relationship of tumors of the bone to both evolution and embryology. The authors contest the idea that malignant variants of the giant cell tumor arise by gradual transformation from benign giant cell tumor. They believe that these are always forms of osteogenic sarcoma with giant cells that produce bone destruction. The discussion of extraskeletal giant cell tumors includes epulis and xanthoma. The authors state that there are two types of sarcoma of soft parts which are prone to invade the bone by direct extension: fibrosarcoma and neurogenic sarcoma. Both these malignant forms cast a soft part shadow in the roentgenogram and produce osseous destruction, eroding the bone from without inwardly. Bone changes in chloroma and Gaucher's disease are given consideration. In a supplement, Bloodgood considers the therapeutic measures in lesions of bone.

There is a two-page chart on the roentgenographic diagnosis of diseases and tumors of bone, illustrating the salient features of bone diseases and bone tumors. There are chapters on the differential diagnosis of neoplastic and non-neoplastic bone conditions, discussing osteomyelitis, tuberculosis, syphilis, and uncommon diseases of bone, including Brodie's abscess, Garré's nonsuppurating osteitis, ossifying periostitis, traumatic myositis ossificans, melorheostosis, osteitis deformans and osteomalacia. Another chapter concerns juvenile bone lesions, including scurvy, rickets, congenital syphilis, osteogenesis imperfecta, fragilitas ossium and marble bones.

The illustrations, including diagrams, roentgenograms and gross and microscopic sections, are numerous and excellent. This long awaited book is a welcome addition to our literature. It can be recommended highly to general surgeons, roentgenologists, pathologists and orthopedic surgeons.

Untersuchungen über das Wirbelgleiten. Von Prof. Hermann Meyer-Burgdorff, Oberarzt der chirurgischen Univ.-Klinik, Rostock. Paper. Price, 15 marks. Pp. 136, with 155 illustrations. Leipzig: Georg Thieme, 1931.

This monograph is the latest on the subject of spondylolisthesis. While the subject is an old one, little literature had accumulated until recently. The author discusses the pathology of spondylolysis and the slipping and the static changes in the pelvis and vertebral column. In an interesting chapter on etiology he attributes most cases to an acquired spondylolysis. The fissure is the result of a chronic bone change (umbau) aided by the lordosis. It may follow vertebral fracture of the lower thoracic and upper lumbar spine. In the chapters on clinical symptoms and on roentgen diagnosis, the author gives numerous detailed case histories. The book closes with a discussion of differential diagnosis and therapy. Spondylolisthesis is an important cause of pain in the back. It may be concealed by symptoms that are not characteristic. Further studies are necessary in the etiology and diagnosis of spondylolisthesis, especially its relation to congenital fissures, the occurrence of fractures of the vertebral arch after trauma and fractures of the vertebra, the course of the dislocation and its spontaneous cure. The greatest aid in the study of these conditions has been the advance in roentgen technic. The author has studied 40 cases of spondylolisthesis and 143 suspected cases. He finds the spondylolisthesis is not really a disease but rather a symptom, which the close observer often discovers incidentally or accidentally. Even in advanced cases the clinical symptoms may not be typical without the roentgen observations. Hence the emphasis in this monograph on the roentgen examination of the patient. The object of the book is to correlate the author's own studies with the known clinical symptoms and the literature on the etiology. The condition was described by Herbinaux in 1782, Rokitanski in 1836 and Kiebisch in 1851. The term spondylolisthesis was coined by Kilian, who considered the condition a gradual dislocation or slipping. In reality, only the body and anterior portion of the arch slip, while the posterior arch and spinous process remain in their old position. The work of Neugebauer, published in 1881, summarized all that was known of the etiology and pathologic anatomy. He was the first to demonstrate that a symmetrical or asymmetrical separation in the arch, at the level of the so-called interarticular portion, must precede the slipping, and that this cleft formation develops in every spondylolisthesis. He looked on the fissure formation as congenital. Meyer-Burgdorff concludes that spondylolisthesis is due to an acquired chronic bone change with fissure formation in the arch and is not congenital; a marked lordosis, and an increased superimposed load on the transverse articulations. Forces acting on the arch in the lumbosacral region are contributing factors. Only rarely is trauma the cause, and then a very severe injury with luxation or subluxation. The condition may be aggravated by a severe injury. Spondylolisthesis often follows fractures of the spine from the eleventh thoracic to the first lumbar, with the resultant

lumbar lordosis and changes in the transverse articulations and adjacent portion of the arch which lead to fissure formation. Treatment should be conservative. The condition tends toward healing after a rest period. Operation accomplishes a similar result and is advisable in severe cases. The illustrations, which include roentgenograms and diagrams, are profuse and excellent. Oblique roentgenograms of the lumbosacral region are shown. The bibliography is extensive. The book should be of value to orthopedic surgeons, roentgenologists and industrial surgeons.

Report of the Preparatory Committee on the Principles Governing the Organisation of Medical Assistance, the Public Health Services and Sanitation in Rural Districts. European Conference on Rural Hygiene. League of Nations, Health Organisation. Series of League of Nations Publications, III. Health, 1931. III. 7. Official No. C. H. 1045. Paper. Price, 2/-; 50 cents. Pp. 62. Geneva: League of Nations; Boston: World Peace Foundation, 1931.

European Conference on Rural Hygiene (June 29th to July 7th, 1931). Volume I: Recommendations on the Principles Governing the Organisation of Medical Assistance, the Public Health Services and Sanitation in Rural Districts. League of Nations, Health Organisation. Series of League of Nations Publications, III. Health, 1931. III. 11[1] Official No. C. 473. M. 202. 1931. III. Paper. Price, 50 cents. Pp. 59. Boston: World Peace Foundation; Geneva: League of Nations, 1931.

In 1930 a committee composed of the leading health workers of Europe was appointed by the League of Nations to study the problem of rural health. The three items mentioned in the title were submitted to different groups of experts, numbering more than fifty in all; their findings are published in the Report of the Preparatory Committee. Later a conference was held at Geneva to which twenty-three European countries sent delegates, and eight countries, including the United States, sent observers. The recommendations of the conference are found in volume I, while the minutes of the conference will appear in volume II. Two thousand persons is the maximum number in a rural community who can be given proper medical attention by a duly qualified medical practitioner. It is desirable that there be a sufficient number of pharmacists to insure proper dispensing of drugs, and of nurses or other qualified auxiliary personnel to work under the direction of the physician. Dispensaries, hospitals and laboratories should be at the disposal of the physician where possible. The public health officer must be a qualified physician but must divorce himself from the private practice of medicine. His rural territory should contain on the average 50,000 inhabitants with a medical assistant for each additional 50,000 of population, and the necessary public health nurses, sanitary inspectors and clerks; the importance of rural health centers is stressed. Sanitation in rural districts is discussed under the headings of sewage disposal, water supply, housing and land improvements. A chapter in the report of the preparatory committee is devoted to sickness insurance as a factor in rural hygiene, prepared by the International Labor Office. A perusal of the two pamphlets makes one realize that the principles of preventive medicine are the same the world over, but methods of practice may vary radically in different countries, according to local conditions. The recommendations were prepared from the result of practical experience, and, while intended primarily for European countries, contain much of value for physicians and health officers in the United States.

Lehrbuch der Röntgendiagnostik. Von H. R. Schinz, W. Baensch und E. Friedl. Nebst Beiträgen von M. Holzmann, A. Hotz, O. Jüngling, E. Liebmann, E. Looser und K. Ulrich. Band I: Skelett; Band II: Innere Organe. Third edition. Paper. Price, 214 marks, per set. Pp. 1-704; 705-1623, with 2714 illustrations. Leipzig: Georg Thieme, 1932.

This is as fine a reference book as is available in any language on roentgen diagnosis. The first volume deals with roentgenologic studies of the osseous system and the second with the internal organs. In addition to a thorough picture of the roentgen observations, the authors have frequent chapters on the associated pathologic changes and the conditions revealed by operation. Full credit is given to the contributions in all other lands, especially America, France and Sweden. There is an excellent chapter giving the latest work in the field of gynecology and pyelography. Many of the roentgenograms have associated sketches of the details for the sake of clearness for one not especially trained in x-ray work. The book is not only excellent for students and practicing physicians but is an exhaustive reference book for radiologists.

Lowered Basal Metabolism—Its Causes and Clinical Significance. By Bernard M. Jacobson, M.D. Fiske Fund Prize Essay, No. 65. Cloth. Pp. 40. Providence, R. I.: Fiske Fund Prize Essay, 1931.

This pamphlet won the Fiske prize of $200 in 1930. It is a study of basal metabolism from the theoretical and clinical points of view. Jacobson defines low basal metabolism "as that caloric output determined under standard conditions which, when compared with the accepted standards of normal metabolism, is definitely depressed." Attention is called to the deficiencies and errors in computing basal metabolism because of the lack of sufficient standards in the very young and old, the variations of metabolism produced by sleep and the different results obtained, depending on whose standard is adopted. He rightfully points out an interesting fact that often a lowered metabolic rate may be the normal rate for that individual. The appearance of symptoms of hyperthyroidism is then accompanied by what is accepted as the normal rate but in fact is an increased rate for that individual. Such information is not new to those acquainted with variations in temperature elevation and blood pressure. There are chapters on the physiologic causes of low basal rate, such as race, climate, sleep and the pathologic causes, as cretinism, myxedema and postoperative hypothyroidism. The author discusses the pulse, the blood pressure, electrocardiograms, respiratory minute volume, spinal fluid, perspiration, cholesteremia, the effects of lowered metabolism on body weight, and their association with diseases of other endocrine glands, nephrosis, anemia and certain diseases of the nervous system. The work does not represent original investigation but is the result of a careful study of the literature. The bibliography is extensive. No claim can be made for this little volume as a contribution to our knowledge but it represents the type of critical work of the young man that should be encouraged.

Oclusión coronaria brusca y lenta. Por los Doctores T. Padilla, professor suplente de la Facultad de Medicina, y P. Cossio, venia docente de la Facultad de Medicina. Prólogo del Prof. C. Bonorino Udaondo. Paper. Pp. 268, with 94 illustrations. Buenos Aires: "La Semana Medica," imp. de obras de E. Spinelli, [n. d.].

The authors state that the first report on a case of coronary occlusion in Argentina was in 1927. It seems remarkable, therefore, that within four years from that time there would appear two such excellent monographs on this subject as the one by Battro, which was reviewed a few months ago, and the present volume. The present volume contains an unusually good and comprehensive digest of the subject. This is based on a personal experience with thirty-three cases and a familiarity with the literature both early and recent. The manner of presentation is scholarly, clear, concise. After an interesting historical review the anatomy and physiology of the coronary artery are discussed, there being several helpful diagrams. Then follow chapters on experimental work, pathology and etiology. The second part of the work is devoted to clinical features, classification, complications and results of occlusion, diagnosis, prognosis and treatment. Much attention is paid to electrocardiography and there are many illustrations covering this phase of the subject. One feature that distinguishes this book is that the authors do not limit their discussion to the acute forms of coronary occlusion but consider as well the slowly developing types. They also aim to show the relation between the anatomic lesions and the resulting symptoms. In fact, as is stated in a prologue written by Udaondo, this is the fundamental idea of the book. The authors largely follow the views of Barnes and Whitten as to electrocardiographic identification of the location of infarcts based largely on the work of Parkinson and Bedford. The desire to establish this relation has perhaps led to an overrefinement of classification, a too definite assignment of cases to particular groups and to particular stages of the disease supposedly revealed by symptoms and electrocardiograms. Such classifications, useful as an aid in understanding the subject oneself or in imparting knowledge to others, are often found to be illusory when the attempt is made to apply the rules in practice. There is also a vagueness and uncertainty of the rules for prognosis, though one might find it difficult to substitute anything better. There is an oversanguine advising of polypharmaceutic drug treatment. Yet, taken as a whole, the book is to be commended as a scientific, sane and scholarly contribution to medicine.

Institute for Child Guidance Studies. Selected Reprints. Edited by Lawson G. Lowrey, M.D. Cloth. Price, $1.50. Pp. 290. New York: Commonwealth Fund, 1931.

The Institute for Child Guidance was organized in 1927 under the auspices of the Commonwealth Fund as a center for training psychiatrists, psychologists and social workers in the technic of child guidance. From time to time various members of the staff have published articles concerning their work. These articles are now collected in one volume for general distribution. The studies are quite practical and will mean much to those interested in child training. They concern not only contributions to the social field but also distinctly medical studies having to do with the complexes, restlessness, delinquency, finger sucking and mental hygiene. One of the most significant essays is the final contribution, by Dr. Lowrey, on the profession of parenthood. It offers a guide and a stimulus to thought for every one who assumes the responsibility for a child's growth and education.

Stereoskopischer Atlas der äussern Erkrankungen des Auges nach farbigen Photographien für Studium und ärztliche Fortbildung mit begleitendem Text. Von Karl Wessely, Professor in München. Lieferung 4, Bild 31-40. Boards. Price, 12 marks. Munich: J. F. Bergmann, 1931.

This is the fourth of the series of colored stereoscopic photographs of diseases of the external eye and is fully up to the standard set by the preceding series. The conditions shown are pterygium, epithelial tumor of the limbus, lacrimal fistula following injury, xerophthalmos following trachoma, melanosarcoma of the choroid, tuberculous iritis, zonular cataract, calcified luxated lens, metallic foreign body in the anterior chamber, and vaccinia of the eyelids. The photographs are actual stereos in color, reproduced by a new process that permits of high color fidelity except in the higher magnification, in which the grains of the photographic emulsion become too plainly visible. Needless to say, the reproductions of the clinical processes are absolutely accurate and the colors add much to the teaching values. On the back of each plate is a short description of the case in English (good English and not "as she is wrote"), German and French.

History of Medicine in the Province of Quebec. By Maude E. Abbott, B.A., M.D. Cloth. Price, $3. Pp. 97, with illustrations. Montreal: McGill University, 1931.

Here is a record of the development of medical science in the province of Quebec from the discovery of Canada in 1534 to the present date. It is based on material collected by Dr. Ahern, which he was prevented from publishing because of death and which covered the period up to 1800. The material since 1800 and all the compilation and writing are the work of Dr. Abbott. The book is handsomely illustrated, but the typography includes a wide column with closely printed type, which makes rather difficult reading. The author has chosen well from the available material, and the data may be depended on as accurate. It is interesting to note that following the introduction of ether in Massachusetts in 1846 it was used in an operation on a woman in Montreal in January, 1847. Several brief biographic sketches are of particular interest and the facts regarding various hospitals, societies and periodicals are all made available.

Le pouls alternant: Étude clinique et essai de pathogénie. Par Marcel Poumailloux, chef de clinique à la Faculté de médecine de Paris. Préface du Dr. Ch. Laubry. Paper. Price, 35 francs. Pp. 239, with 18 illustrations. Paris: Masson & Cie, [n. d.].

The author rehearses the views of former writers, such as Gaskell, Hering and Gravier, who have explained the alternating pulse on the basis of abnormal cardiac conditions. These views he regards as invalid in a large proportion of cases. He credits Wenckebach, who advanced the hemodynamic theory, with first calling attention to the rôle of the arteries in pulsus alternans. Poumailloux elaborates this theory, supporting it by clinical and experimental studies. He believes that, in many instances in which an examination of the heart alone by auscultation or electrocardiography fails to show the alternation, a study of the arteries will reveal the seat of the phenomenon. The state of the vascular system, particularly "vascular plethora," together with that of the nerves that regulate the peripheral vessels, should be given more attention if one is to understand this condition. There is a chapter devoted to practical considerations. The author contends that the alternating pulse should not too dogmatically be regarded as of evil omen and as a sure harbinger of early death. It will be interesting to see whether these views are accepted when they are subjected to later experimental and clinical tests by others.

The Mind and Its Body: The Foundations of Psychology. By Charles Fox, Director of the Training of Schoolmasters in the University of Cambridge. Cloth. Price, $3.50. Pp. 316. New York: Harcourt, Brace & Company, 1932.

The author has previously written several excellent contributions to the field of psychology. The present volume is planned to provide a consideration of the subject for advanced readers. The author provides a discussion of various theories in this field and, after considering what has been learned of animal and human psychology, discusses such special topics as the psychology of language and of temperament, the importance of instinct, the meaning of dreams, and hallucinations and illusions. The work is profound and not to be confused with popular considerations. From the point of view of psychology the author defines and explains freedom of the will and offers an understanding of the immortality of the soul. Dr. Fox finds the body and mind so intimately bound that their separation is inconceivable. Nobility of soul arises from the pursuit of what is of permanent worth. Beyond that, he says, "The question of the immortality of the soul can only be discussed in terms of concepts derived from religion."

Semiología de la onda t del electrocardiograma y su interpretación clínica. Por Antonio Battro. Trabajo correspondiente al segundo año de adscripción a la Cátedra de Clínica Médica. Paper. Pp. 121, with 66 illustrations. Buenos Aires: Sebastián de Amorrortu, 1931.

This monograph is based chiefly on a critical survey of the literature. Apparently there is not one of the 167 articles listed in the bibliography to which at least one reference is not made in the text. Besides, the author has made studious observations of his own. The nature of the T wave is discussed together with its variations under normal conditions. Then there are taken up the effects of drugs, heat and cold, together with the alterations due to nervous influences. Following this there is considered the T wave as seen in such diseases as pericarditis, myocarditis, angina pectoris, coronary occlusion and valvular lesions. There are many well selected electrocardiograms. The cardiologist will find the book both stimulating and helpful.

Notes on Children's Nursing. By Marguerite C. Erxleben, R.N., B.S., Director of Instruction, The Children's Hospital of Philadelphia. Fabrikoid. Price, $2. Pp. 242, with 43 illustrations. Philadelphia: F. A. Davis Company, 1931.

This is a concise collection of nursing procedures for the care of children in the hospital and dispensary. The complete and general nursing care in any one ailment is not discussed. For this reason its value is confined to that of a supplementary textbook for student and graduate nurses. The subject matter covered is presented in a clear and efficient manner. The materials required for each nursing procedure are conveniently listed along with a short discussion of the method. The part devoted to nursing care of the premature infant does not appear to be adequate for this highly important branch of pediatric nursing. As a collection of notes on children's nursing it serves its intended purpose, but it will be of practical interest only to those engaged in institutional work.

Manuel des calculs de laboratoire: Précision. Discussion et interprétation des résultats expérimentaux à l'usage des chimistes, biologistes et physico-chimistes. Par H. Vigneron. Préface de P. Pascal, correspondant de l'Institut. Paper. Price, 40 francs. Pp. 183, with 45 illustrations. Paris: Masson & Cie, 1931.

This work is of value to those who desire to review their courses in college mathematics. It deals particularly with methods of calculating results of precision measurements as used in quantitative and in theoretical chemistry. The author takes up for first consideration the important theory of errors in chemical calculations. This is followed by interpretation of experimental results, followed by a more mathematical discussion of interpolations. Considerable space is devoted to the discussion of experimental results from a mathematical rather than a chemical standpoint. This is most appropriately a book for those in close contact with physical or physical-organic investigations.

Medicolegal

Physician's Right to Refuse to Treat a Case

(Childers v. Frye (N. C.), 158 S. E. 744)

Childers fell from a rapidly moving automobile. He was picked up unconscious and taken immediately to a hospital operated by the defendant-physician. While he was being removed into the hospital, an attendant asked whether he was drunk. She was told that he might have been drinking, but that he was not drunk. When the physician-defendant first saw the patient he called attention to the fact that he had been drinking and at his suggestion one of Childers' companions smelled Childers' breath. The physician-defendant dressed the patient's right eye, examined his arms and legs, felt his head, and then informed his companions that that was all that he could do. He directed that the patient be taken home, threatening that if that was not done he would turn the patient over to the police. A few hours after the patient reached home, a physician was called in, and later a second physician. The patient died, however, a few days later. His mother, as administratrix of his estate, sued the defendant-physician, on the theory that he failed to make a proper examination of the patient in order to discover the extent of his injuries and negligently abandoned the treatment of his patient. The physician-defendant filed an answer denying that he had accepted the injured person as a patient and alleging that he was brought to the defendant's hospital temporarily in an intoxicated and unconscious condition; that his companions took him home with instructions from the defendant to return him to the hospital after he was sober; and that he was never returned to the hospital, nor was the defendant ever requested to render further services. The patient's companions denied that they had heard the defendant say anything about bringing the patient back to the hospital if he did not get better. A judgment of nonsuit was entered, and the plaintiff appealed to the Supreme Court of North Carolina.

The question of law to which all others are subsidiary, said the Supreme Court, is whether there was sufficient evidence to be submitted to the jury, tending to establish the relationship of physician and patient between the deceased and the defendant. A physician is not bound to render professional services to every one who applies, and he may by notice or special agreement limit the extent and scope of his employment. As a physician cannot make a contract with an unconscious person, the ultimate test of liability in a case like the present one depends on whether the physician actually accepted a person as a patient and undertook to treat him. If there is conflicting testimony, it would be for a jury to decide whether there was or was not such an undertaking or acceptance by the physician. In the present case, all evidence tends to show that when the injured man was brought into the hospital the defendant looked him over and on discovering that the patient had been drinking declined to accept him as a patient or to undertake the necessary treatment. Even if the defendant was not justified in assuming that the patient was drunk, still the law did not compel him to accept the injured man as a patient. Furthermore, there is no evidence tending to show that the refusal of the defendant to accept the injured man as a patient or to make a more thorough examination of him was the proximate cause of his death, especially in view of the fact that the patient was treated by two physicians possessing and employing, so far as the record discloses, all requisite skill and care. The judgment of nonsuit entered in favor of the defendant-physician by the trial court was affirmed.

Malpractice of Dentist Not Provable by Testimony of Physician.—Rawleigh sued Donoho, a licensed dentist, to recover damages for malpractice, alleging that the dentist, in extracting an impacted tooth, fractured his jaw. Rawleigh, the patient, called a licensed physician as a witness. The physician, after stating his professional qualifications and his experience in reading and interpreting roentgenograms, was handed two roentgenograms of the tooth extracted, taken prior to the extraction. He was then asked to examine the roentgenograms and state whether or not, in his opinion, the location of the impaction could be determined therefrom with a certainty sufficient to permit the proper performance of an extraction. The trial court sustained an objection to the question, and on appeal its ruling was affirmed by the Court of Appeals of Kentucky. In malpractice actions against dentists, said the Court of Appeals, experts skilled in the dental profession are the only witnesses qualified to testify as to whether or not there was negligence in a particular method of treatment. The testimony indicated that the witness was neither an expert skilled in the dental profession nor otherwise qualified to render an opinion as to whether or not the roentgenograms indicated the impaction with sufficient certainty to allow the extraction to be properly performed. Although the witness was a physician, he had had no such experience as would qualify him to testify as an expert with respect to the matter submitted to him.—*Rawleigh v. Donoho (Ky.), 38 S. W. (2d) 227.*

Society Proceedings

COMING MEETINGS

American Medical Association, New Orleans, May 9-13. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

Alabama, Medical Association of the State of, Mobile, April 19-22. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association for Thoracic Surgery, Ann Arbor, Mich., April 18-20. Dr. Duff S. Allen, 3720 Washington Blvd., St. Louis, Sec'y.

American Association of Anatomists, New York, March 24-26. Dr. George W. Corner, University of Rochester School of Medicine, Rochester, N. Y., Secretary.

American Association of Pathologists and Bacteriologists, Philadelphia, April 28-29. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.

American Association of Physical Anthropologists, Washington, D. C., March 21-23. Dr. D. J. Morton, 632 W. 168th St., New York, Sec'y.

American Climatological and Clinical Association, Atlantic City, May 5-7. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Mass., Secretary.

American College of Physicians, San Francisco, April 4-8. Mr. E. R. Loveland, 133 South 36th Street, Philadelphia, Executive Secretary.

American Dermatological Association, Havana, Cuba, May 3-5. Dr. William H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.

American Gastro-Enterological Association, Atlantic City, May 2-3. Dr. Charles G. Lucas, 307 West Broadway, Louisville, Secretary.

American Physiological Society, Philadelphia, April 28-30. Dr. Arno B. Luckhardt, 5216 Greenwood Avenue, Chicago, Secretary.

American Proctologic Society, Memphis, May 6-7. Dr. Curtice Rosser, 710 Medical Arts Building, Dallas, Texas, Secretary.

American Society for Clinical Investigation, Atlantic City, May 2. Dr. Cyrus C. Sturgis, Simpson Memorial Institute, Ann Arbor, Mich., Secretary.

American Society for Experimental Pathology, Philadelphia, April 28-30. Dr. C. Phillip Miller, Jr., University of Chicago, Chicago, Secretary.

American Society for Pharmacology and Experimental Therapeutics, Philadelphia, April 27-30. Dr. V. E. Henderson, University of Toronto, Toronto, Secretary.

American Society of Biological Chemistry, Philadelphia, April 28-30. Dr. H. B. Lewis, University of Michigan Medical School, Ann Arbor, Secretary.

American Society of Clinical Pathologists, New Orleans, May 6-9. Dr. A. S. Giordano, 531 North Main Street, South Bend, Ind., Secretary.

Arizona State Medical Association, Globe, April 21-23. Dr. D. F. Harbridge, 407 Goodrich Building, Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 5-7. Dr. William R. Bathurst, 814 Boyle Building, Little Rock, Secretary.

Association of American Physicians, Atlantic City, May 3-4. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.

California Medical Association, Pasadena, May 2-5. Dr. Emma W. Pope, 450 Sutter Street, San Francisco, Secretary.

District of Columbia, Medical Society of the, Washington, D. C., May 4-5. Dr. C. B. Conklin, 1718 M Street, N. W., Washington, D. C., Secretary.

Florida Medical Association, Sarasota, May 3-4. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.

Iowa State Medical Society, Sioux City, May 4-6. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.

Kansas Medical Society, Kansas City, May 3-5. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 26-27. Dr. Walter Dent Wise, 1211 Cathedral Street, Baltimore, Secretary.

Medical Society of the Missouri Valley, Omaha, Neb., March 29-31. Dr. Joseph D. McCarthy, 107 South 17th Street, Omaha, Secretary.

Mississippi State Medical Association, Jackson, April 12-14. Dr. T. M. Dye, Clarksdale, Secretary.

North Carolina, Medical Society of the State of, Winston-Salem, April 18-20. Dr. L. B. McBrayer, Southern Pines, Secretary.

Ohio State Medical Association, Dayton, May 3-4. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.

South Carolina Medical Association, Columbia, April 19-21. Dr. E. A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Memphis, April 12-14. Dr. H. H. Shoulders, 706 Church Street, Nashville, Secretary.

Texas, State Medical Association of, Waco, May 5-7. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

2: 1-72 (Jan.) 1932

Relations and Functions of Clinical Pathologist in Hospital Staff. D. Riesman, Philadelphia.—p. 1.

*Prophylactic Vaccination Against Tularemia. L. Foshay, Cincinnati. —p. 7.

*Experimental Production of Agranulocytosis. R. R. Kracke, Emory University, Ga.—p. 11.

Simple Medium for Isolation of Bacteria of Typhoid and Dysentery Groups. J. C. Small and W. A. Kreidler, Philadelphia.—p. 31.

*Precipitin Test for Diagnosis of Meningitis. W. A. Kreidler and Margaret E. Murphy, Philadelphia.—p. 33.

Analysis of One Thousand Five Hundred and Thirty-Five Autopsies. O. A. Brines, Detroit.—p. 37.

*Focal Cyclic Growth as Factor in Production of Nodular Goiter. B. Markowitz, Bloomington, Ill.—p. 57.

Modified Silver Stain for Treponema Pallidum. Elena de Galantha, Rochester, Minn.—p. 63.

Prophylactic Vaccination Against Tularemia.—Foshay discusses his experience with prophylactic vaccination against tularemia and describes a method for making an adequate, relatively nontoxic antigen. He believes that prophylactic vaccination will effectively protect man against laboratory infections of tularemia.

Experimental Production of Agranulocytosis.—Kracke states that agranulocytosis is a clinical entity whose pathology is probably primary in the bone marrow, followed by sepsis, which may be either local or general, or followed by no evidence of sepsis. He describes experiments in which he noted that subcutaneous injections of benzene and olive oil (if given in sufficiently small doses, so as not to affect the erythroblastic tissues) resulted in the development of clinical agranulocytosis in rabbits. The smaller the dose, the more selective became the affinity for the myelocytic tissues. The course of the condition seemed to be similar to that seen in human beings; that is, first a neutropenia, then generalized infection from organisms already present, or from organisms introduced. Agranulocytosis with subsequent infection and without infection was produced by the subcutaneous injection of benzene without olive oil and also by the intraperitoneal injection of benzene. Benzene inhalations failed to depress the leukocyte count. The intravenous injection of benzene even in small doses resulted in the immediate death of the animal, so it is probable that oxidation products of benzene are directly responsible for its leukocyte depressing properties. Agranulocytosis can be produced with benzene in a rabbit having a leukocytosis. The author believes that, although the etiology of granulocytosis is unknown, the benzene ring must be strongly considered. He recommends that those who have the opportunity to study this disease direct their attention to a careful history of possible contact with substances producing granulopenia, bearing in mind that when the patient consults the physician he presents the terminal stage of a disease that possibly began months before.

Precipitin Test for Diagnosis of Meningitis.—Kreidler and Murphy describe a rapid and accurate precipitin test for use in the diagnosis of meningitis. The precipitin test on meningitic spinal fluids renders possible the reporting of the causative organism and also the commercial serum most suitable for treatment within thirty minutes after the specimen reaches the laboratory. The authors have checked the precipitin tests with agglutination tests whenever possible and results have agreed consistently. In five cases studied in which the cultures were negative, thus rendering an agglutination test impossible, the precipitin test was positive. This fact and the possibility of returning an almost immediate report are advantages of the precipitin test in the diagnosis of meningitis that justify its use in the routine examination of spinal fluid in cases of suspected meningitis.

Cyclic Growth in Nodular Goiter.—According to Markowitz, there are two distinct processes in the physiology of the thyroid which produce a constant hyperplasia-involution cycle; namely, (1) process of thyroid secretion—active with hyperplasia, and (2) process of accumulation of colloid—passive with involution. These two processes occur as functional cycles and when in disproportion produce nodulation. In diffuse hyperplastic or exophthalmic goiter, the process of secretion overwhelms the process of colloid storage. Finally, late in the disease, this colloid storage replaces the secretion at focal points with production of nodules. In nodular colloid goiter the process of colloid storage overwhelms the process of secretion. But at focal points the secretory phase continues and is not replaced by colloid storage with production of nodules. In nodular hyperplastic goiter there is overgrowth of both processes, with colloid storage replacing thyroid secretion at focal points early in the disease with production of nodules.

American Journal of Ophthalmology, St. Louis

15: 1-94 (Jan.) 1932

*Elective Localization in Determining Etiology of Chronic Uveitis. E. C. Rosenow and A. C. Nickel, Rochester, Minn.—p. 1.

*Considerations Underlying Experimental Production of Uveitis. A. L. Brown, Cincinnati.—p. 19.

*Study of Syphilis in Etiology of Uveitis. P. A. O'Leary, Rochester, Minn.—p. 24.

Infections of Upper Respiratory Tract in Etiology of Uveitis. J. E. MacKenty, New York.—p. 27.

New Diagram for Testing Binocular Diplopia. R. Castroviejo, Chicago. —p. 33.

Epinephrine in Progressive Myopia: III. Phase of Pupillary Reaction. L. L. Mayer, Chicago.—p. 35.

Progress in Medical and Surgical Treatment in Ophthalmology. W. F. Hardy, St. Louis.—p. 37.

Elective Localization in Chronic Uveitis.—In many cases streptococci having elective localizing power have been isolated by Rosenow and Nickel in uveitis, especially in the acute form. Different foci have been found. The most frequent were teeth, tonsils, prostate or cervix. Removal of these foci, and treatment with autogenous vaccines prepared from the involved eyes of rabbits that had received injections, have been generally efficacious.

Experimental Production of Uveitis.—Brown calls attention to the difference between producing, experimentally, isolated inflammations of the uveal tract and recurring uveitis. The literature on the subject is briefly reviewed. Several series of experiments are reported in which eyes were sensitized by injecting various antigens into the anterior tissues of the eye and attacks of uveitis were produced on introducing the same antigen into other parts of the animal several days later.

Syphilis in Etiology of Uveitis.—O'Leary presents data which indicate that 6 per cent of patients with uveitis have syphilis, that treatment for syphilis brings about material improvement in the uveitis in 33 per cent, and that it affords slight benefit in an additional 28 per cent. The patients with the anterior type of uveitis as a rule respond more favorably. Deductions as to the part syphilis plays in the production of uveitis, based on the therapeutic effect, are hazardous, not only because of the fact that ocular syphilis is notoriously resistant to treatment but because nonspecific benefit was derived in 42 per cent of a group of patients who had uveitis but did not have syphilis. The incidence of syphilis among patients who have uveitis compares favorably with the general incidence of syphilis in the Mayo Clinic. Evidence was not found in the literature that Spirochaeta pallida is the cause of uveitis in the same sense that it is the cause of interstitial keratitis. There are, however, numerous references to syphilis as an etiologic factor in uveitis. It appears that in a small percentage of cases the etiology of uveitis is syphilis, and that antisyphilitic treatment is of benefit in 61 per cent of these cases of syphilis. In 42 per cent of the cases in which syphilis is not a factor, antisyphilitic remedies are of definite benefit also.

American Journal of Physical Therapy, Chicago

8: 261-288 (Jan.) 1932

Functional Neuroglandular Radiotherapy, Especially of Region of Suprarenal Capsules. R. Desplats, Lille, France.—p. 267.

Technic of Diathermic Epilation. H. Bordier, Lyons, France.—p. 273.

American Journal of Physiology, Baltimore

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Studies on Suprarenal Insufficiency: IX. Vascular Responses to Histamine in Normal and Suprarenalectomized Rats. L. C. Wyman and Caroline Tum Suden, Boston.—p. 285.
Studies on Electrical Stunning of Dogs. A. C. Ivy and F. S. Barry, Chicago.—p. 298.
Graphic Analysis of Frog Heart Tracings. C. C. Stewart, Rochester, Minn.—p. 308.
Absorption of Tyramine from Intestine. C. L. Coyle and T. E. Boyd, Chicago.—p. 317.
Responses in Isolated Limbs of Crustacea and Associated Nervous Discharges. T. C. Barnes, Boston.—p. 321.
Mechanism of Ovulation in Rabbit: V. Effect of Direct Intrafollicular Injections of Extracts of Urine of Pregnancy. M. H. Friedman, Philadelphia.—p. 332.
Electrical Resistance Changes in Dying Voluntary Muscle of Rabbits. A. Hemingway and D. A. Collins, Minneapolis.—p. 338.
*Nonessentiality of Posterior Hypophysis in Parturition. P. E. Smith, New York.—p. 345.
Comparative Sensitivity of Reproductive Tracts of Hypophysectomized and Ovariectomized Rats to Follicular Hormone. P. E. Smith, New York.—p. 349.
Quantitative Study Relating Magnitude of Pulmonary Ventilation to Impairment of Oxidations Produced by Intravenous Injection of Acid and Sodium Cyanide. Marie Pelecovich, Ann Arbor, Mich.—p. 357.
*An Accessory Regulation of Acid-Base Equilibrium and Pulmonary Ventilation by Virtue of Lactic Acid Changes in Liver. G. S. McClure, Ann Arbor, Mich.—p. 365.
Late Effects of Section of Vagus Nerves on Gastric Acidity. Frances R. Vanzant, Rochester, Minn.—p. 375.
Influence of Diet and Anterior Pituitary Growth Hormone on Growth Rate of Adolescent Rats. A. H. Bryan and D. W. Gaiser, Boston.—p. 379.
Blood Regeneration Studies: II. Observations on Blood of Normal Dogs with Especial Reference to Measurement of Volume, Erythrocytes, Leukocytes and Nitrogenous Constituents. Jane M. Leichsenring, Alice Biester, Hortense H. Hönig, Sparkle M. Furnas, Edith S. Foss and M. Virginia Routt, Minneapolis.—p. 391.
Studies on Conditions of Activity in Endocrine Organs: XXVIII. Some Effects of Sympathin on Nictitating Membrane. A. Rosenblueth and W. B. Cannon, Boston.—p. 398.
Glycolysis and Oxidation of Sugar in Blood, Incubated and Circulating "in Vitro." E. W. H. Cruickshank and C. W. Startup, Halifax, N. S.—p. 408.
Hypertrophy of Gastro-Intestinal Tract and High Residue Diets. T. Addis, San Francisco.—p. 417.
Sedimentation of Erythrocytes Suspended in Lymph. J. Russell and T. E. Boyd, Chicago.—p. 424.
Rate of Disappearance of Glycogen During Contraction of Perfused Heart of Rabbit. W. E. MacPherson, H. E. Essex and F. C. Mann, Rochester, Minn.—p. 429.
*Some Chemical Effects from Constant Intravenous Epinephrine Injection in Dogs. P. C. Samson and H. R. D. Jacobs, with assistance of Hulda Rohde, Chicago.—p. 433.
Effect of Sympathectomy on Sexual Functions, Lactation and Maternal Behavior of Albino Rat. Z. M. Bacq, Boston.—p. 444.
Increased Metabolism of Sartorius Muscle of Frog Following Exposure to Roentgen Radiation. W. O. Fenn and W. B. Latchford, Rochester, N. Y.—p. 454.
Variations in Blood of Rabbits from Birth to Maturity. M. M. Kunde, M. F. Green, E. Changnon and E. Clark, Chicago.—p. 463.
*Blood Changes in Experimental Hypothyroidism and Hyperthyroidism (Rabbit). Margarete M. Kunde, M. F. Green and G. Burns, Chicago.—p. 469.
Testicular Degeneration Due to Inadequate Vitamin A in Cases Where E is Adequate. H. M. Evans, San Francisco.—p. 477.
Studies in Physiology of Exercise: VIII. Chronic Effects of Running and Swimming on Hearts of Growing Dogs as Revealed by Roentgenography. A. H. Steinhaus, J. P. Kirmiz and K. Lauritsen, Chicago.—p. 487.
Id.: IX. Chronic Effects of Running and Swimming Exercise on Hearts of Growing Dogs as Determined Electrocardiographically. A. H. Steinhaus, R. W. Boyle and T. A. Jenkins, Chicago.—p. 503.
Id.: X. Effects of Running and Swimming on Organ Weights of Growing Dogs. A. H. Steinhaus, Loris A. Hoyt and H. A. Rice, Chicago.—p. 512.

Posterior Hypophysis Not Essential in Parturition.—Smith removed the posterior hypophysis in adult female rats and noted the effect on parturition. The completeness of the ablation was verified by a microscopic examination of serial sections of the pituitary capsule and its contents. In all cases some anterior lobe tissue also was removed, but a sufficient amount remained to maintain normal body growth and sex cycles. Six of these animals were mated and bore litters. Birth occurred at the usual time. The evidence thus shows that in rats a secretion of the posterior hypophysis is unnecessary either for the genesis or for the maintenance of the uterine contractions at parturition.

Liver, Lactic Acid and Acid-Base Equilibrium.—McClure reports the results of a study of the function of the liver in the control of the acid-base equilibrium. The assumption that absorption and reconversion of lactic acid by the liver to glycogen or sugar is accompanied by a liberation of free base and a reduction in hydrogen ion concentration was tested by p_H determinations of portal, arterial and hepatic venous blood. The assumption that the magnitude of this reconversion of blood lactic acid and liberation of free base would vary with the degree of impairment of oxidation and concentration of blood lactic acid was tested by similar p_H determinations following intravenous injection of sodium cyanide. Under the basal conditions obtaining the hydrogen ion concentration was lowest in the hepatic venous blood, highest in the portal blood and midway between in the arterial blood. Intravenous injection of sodium cyanide produced variable effects on the hydrogen ion concentration of the arterial blood, depending on the accompanying changes in pulmonary ventilation. The greater the augmentation of ventilation, the greater was the initial decrease in hydrogen ion concentration. Intravenous injection of sodium cyanide produced a large increase in the hydrogen ion concentration of the portal blood and a relatively small increase in the hepatic venous blood. The resulting increase in the difference of hydrogen ion concentration between portal and hepatic venous blood occurred with and without an accompanying decrease in hydrogen ion concentration of the arterial blood. The fact that hepatic venous blood showed a lower hydrogen ion concentration than the portal or arterial blood during "normal basal conditions" suggested that the liver is continually removing lactic acid from the blood and liberating free base. The fact that the difference in hydrogen ion concentration between portal and hepatic venous blood increased after intravenous injection suggested that this process is augmented during impaired oxidation. The liver thus provides a self-corrective mechanism against acidosis arising from impaired oxidation. The resupply of sugar to the blood and tissues resulting from the reconversion of lactic acid is considered as an accessory mechanism supporting the failing oxidations. Assuming a reconversion of 28 mg. of lactic acid per hundred cubic centimeters of blood, enough base is liberated to lower the hydrogen ion concentration of the portal blood about 0.09 p_H. This approximates the difference in p_H of portal and hepatic venous blood of the "normal basal condition" found in these experiments. Assuming that the flow of blood through the liver equals 20, 30 or 40 per cent of the total cardiac output, it is computed that the continuous effect of the liver on the hydrogen ion concentration of the total mixed blood should be approximately a reduction of 0.018, 0.027 or 0.036 p_H with each complete circulation of the blood.

Constant Intravenous Epinephrine Injection in Dogs.—Samson and Jacobs administered epinephrine intravenously to unanesthetized dogs at constant rates over relatively long periods of time (up to thirteen days). Continuous epinephrine administration resulted in a transient hyperglycemia and glycosuria, both of which disappeared in twenty-four hours. The normal glycemia persisted with continued injection, even when the rate of administration was doubled, and there was no further glycosuria. The cessation of epinephrine administration while the blood sugar values were within normal limits led to an abrupt hypoglycemia with a slower return of the blood sugar to normal values. With further injection a second hyperglycemia and glycosuria occurred, although not as marked as the first. Continuous epinephrine administration increased the urinary output in every case. Continuous epinephrine injection did not affect the urinary nitrogen excretion as measured by twenty-four hour periods. Comment is made on the possibility of interpreting the glycemic curves.

Blood Changes in Hypothyroidism and Hyperthyroidism.—According to Kunde and her associates, the anemia of hypothyroidism (rabbit) is characterized by a greater than normal diameter of the erythrocytes, a color index greater than 1, a normal hydrochloric acid content of the gastric contents, and a bone marrow which does not simulate either grossly or microscopically the bone marrow of pernicious anemia. The cholesterol content of the blood, accompanying the anemia of hypothyroidism, is greater than normal. Experimental hyperthyroidism in the rabbit causes an initial polycythemia and a corresponding increase in hemoglobin. Prolonged hyperthyroidism results in an anemia characterized by a color index less than 1 and a decreased diameter of the red blood cell. The total blood volume in experimental hypothyroidism and hyper-

thyroidism (dye method) does not change beyond the limits of normal variation. In the normal adult rabbit, desiccated thyroids in dosages of from 250 to 450 mg. daily per rabbit does not cause an appreciable increase in the percentage of reticulocytes. In the cretin a reticulocyte response varying from 4 to 10 per cent occurs as the result of thyroid feeding.

Annals of Surgery, Philadelphia

95: 1-160 (Jan.) 1932

Congenital Cysts and Fistulas of Neck. H. W. Meyer, New York.—p. 1.
*Management of Skull Fracture Involving Frontal Sinus. E. S. Gurdjian and H. K. Shawan, Detroit.—p. 27.
Osteomyelitis of Jaws in Nurslings and Infants. A. O. Wilensky, New York.—p. 33.
*Roentgen Visualization of Parotid Gland by Means of Lipiodol Injection. A. J. Barsky and H. Silberman, New York.—p. 46.
*Primary Tuberculosis of Parotid Gland. H. Berman and M. J. Fein, Brooklyn.—p. 52.
*Metastatic Epidural Abscess of Spinal Cord: Recovery After Operation. W. M. Craig, Rochester, Minn., and J. B. Doyle, Los Angeles.—p. 58.
*Pulmonary Embolism and Infarction: Analysis of Sixty-Four Cases. K. Hosoi, Albany, N. Y.—p. 67.
Nerve Suture and Muscle Repair: Primary Suture of Ulnar Nerve and Secondary Reconstruction of Extensor Tendons of Forearm. E. Horgan, Washington, D. C.—p. 93.
Antivirus Treatment of Malignant Edema Infections. A. N. E. Merten and E. J. Oesterlin, Milwaukee.—p. 101.
*Closing Bronchial Stump in Pulmonary Surgery. W. E. Adams and Huberta M. Livingstone, Chicago.—p. 106.
*Traumatic Rupture of Congenital Hydronephrotic Kidney. J. A. Lazarus, New York.—p. 117.
*Cyst of Pancreas Associated with Ectopic Splenic Island. C. A. Traver, Albany, N. Y.—p. 127.

Skull Fracture Involving Frontal Sinus.—Gurdjian and Shawan report that the incidence of frontal sinus fractures in a series of more than 2,600 cases of skull fracture was around 5 per cent. The majority of sinus fracture cases are asymptomatic. The patients should be confined to bed for a period of eight to ten days at least. They should not be permitted to blow the nose. Intranasal douches are contraindicated. The patient should be watched for infection in the sinus and suppuration within the cranial cavity. Compound fractures in this situation should be operated on as soon as the condition of the patient permits. The posterior wall of the sinus should be inspected. The great majority of frontal sinus fractures should be left alone. The results with conservative treatment are gratifying. The incidence of meningitis in the authors' series was 3.8 per cent.

Roentgen Visualization of Parotid Gland.—Barsky and Silberman emphasize the fact that roentgen examination of the parotid gland after injection of iodized poppy-seed oil 40 per cent is a simple, safe procedure when properly performed. In their series no injurious effects have resulted from the injection. Injection of the gland with iodized poppy-seed oil should never be made in the presence of active infection. At present, this method is the only accurate way of determining the exact condition of the gland and its deviations from the normal when diseased. In cases of parotid fistula, actual visualization of the ducts is of the greatest aid in determining the course of treatment.

Primary Tuberculosis of Parotid Gland.—According to Berman and Fein, tuberculosis of the parotid gland is rare and is often mistaken for malignant tumor or syphilis. Two distinct types are usually found: The first is the chronic or fibroid type, which is encapsulated and may not produce symptoms for months or even years; the second type is acute inflammatory, which is diffuse and runs its course in a few days or a week. Tubercle bacilli gain entrance into the parotid gland by one of three ways, canalicular, hematogenous or lymphatic, with the first being the most common. Symptoms consist of swelling of the gland, as either a circumscribed or fluctuating tumor, or more diffuse with an occasional soft spot. The second is usually adherent, red, tense, shiny and edematous. Pain is a late sign and the lymph nodes of the neck are not involved. Diagnosis is likely to be difficult unless it is confirmed by biopsy. Prognosis is good, as the condition is purely local. The treatment is purely operative, and even when facial paralysis takes place from injury to the facial nerve, either by disease or by operative trauma, there is recovery in most instances.

Abscess of Spinal Cord.—In a review of fourteen cases of metastatic epidural abscess of which the histories are recorded in the literature, Craig and Doyle discovered only one in which the patient had recovered. They report an additional case in which the condition was diagnosed, the patient operated on, and recovery took place.

Pulmonary Embolism and Infarction.—Hosoi's study is based on sixty-four verified cases of pulmonary embolism with or without infarction. They consist of twenty-five postoperative, three posttraumatic, and thirty-six medical cases of embolism. This gives a necropsy incidence for embolism of 7.9 per cent, a mortality incidence of 2.1 per cent, and a morbidity incidence of 0.102 per cent. Sex has probably no etiologic significance. The age incidence of embolic cases suddenly increases from 40 years onward. The obese patients with embolism were all in this age liability group. Embolism occurred in 0.09 per cent of the patients after general surgery and in 0.08 per cent after gynecologic surgery. Sixty-four per cent of the cases occurred in the first and second weeks postoperatively. The duration of symptoms from onset of pulmonary embolism to death varied from sudden to ten days, 80 per cent dying by the third day. Sixty-eight per cent of the operations were in the lower part of the abdomen. On the other hand, in medical embolism, the duration of symptoms was longer (as long as twenty-seven days) owing to the greater frequency of smaller emboli occurring sometimes in showers. Furthermore, patients with medical embolism were not so severely affected, since only about one third of them died within the first three days. Forty-two per cent of the postoperative emboli lodged in the lower lobes, more often on the right in the ratio of almost 2:1, and 42 per cent in the main pulmonary artery or in one or both of its two branches, the right being favored. Owing to the frequency of the embolism being less massive in medical cases, the emboli were able to reach the smaller branches of the pulmonary artery; in 64 per cent of the cases the lower lobes were involved, but, contrary to postoperative infarction, medical infarction occurred more often in the left lower lobe than in the right lower. There was manifest infection in only 32 per cent of the postoperative cases and in 50 per cent of the medical cases. Infarction after embolism is liable to occur when there is an added circulatory congestive disturbance. The pathologic changes in the heart presented a varied picture of hypertrophy, cardiosclerosis and endocarditis. The hearts in the medical cases were uniformly larger and 42 per cent of them showed severe lesions of hypertrophy and dilatation (decompensation), coronary thrombosis with infarction, vegetative endocarditis, and pancarditis. Infarction occurred almost twice as frequently after medical embolism as after postoperative embolism.

Closing Bronchial Stump in Pulmonary Surgery.—Adams and Livingstone describe experiments on dogs in which they demonstrated that complete stenosis of a bronchus one-half inch in diameter was the usual occurrence in two weeks following the application of a 35 per cent solution of silver nitrate. Stenosis of the bronchial lumen was brought about by collapse of its wall and by filling in of the lumen with the injured elements of the wall and granulations, with subsequent fibrous tissue formation. Massive atelectasis accompanied complete stenosis of the main bronchus of a pulmonary lobe. No atelectasis was present when all the main air passages to the lobe were not completely obstructed. The entire wall of a bronchus became necrotic following cauterization with a 75 per cent solution of silver nitrate. Parts of the wall remained viable when solutions of a lower percentage were used. The cartilages and elastic tissue were found to be the most resistant to destruction by the solutions employed. Following necrosis of the entire bronchial wall, only the epithelium was found to regenerate. Regeneration of the epithelium was rapid, not infrequently giving rise to polypus and inclusion cyst formation. Fibroblastic proliferation was pronounced, especially following 35 and 50 per cent solutions of the chemical.

Rupture of Hydronephrotic Kidney.—Lazarus states that the incidence of rupture of congenital hydronephrotic kidneys is small. In children, kidneys that rupture as a result of mild traumas are usually hydronephrotic. So-called spontaneous rupture of kidneys may be due to mild forms of trauma easily overlooked by patients. They are rare, as attested by a paucity of cases reported in the literature. Hematuria is not a cardinal symptom in rupture of the kidney. The presence of ecchymotic

areas over the skin of the loin, thigh, penis or perineum may be suggestive of a renal injury. Exploratory laparotomy is indicated in all cases in which doubt exists regarding the presence of an intra-abdominal lesion associated with the renal injury. The kidney should be exposed and explored through a second incision in the loin. Retroperitoneal extravasations are best drained through the lumbar route rather than transperitoneally. Conservative surgery cannot be employed in cases of ruptured congenital hydronephrotic kidneys, nephrectomy being the procedure of choice.

Cyst of Pancreas.—Traver reports a case of cyst of the pancreas in a man, aged 61, who died of pulmonary embolism twenty-one days after operation. The cyst had ruptured, the contents causing widespread fat necrosis. The lining of the cyst suggested an origin from pancreatic ducts, with possibly a congenital anomaly of the ducts as a basis for the condition. This hypothesis is supported by the presence of another anomaly, splenic tissue within the pancreas. Other theories of etiology are discussed. Treatment consists of early operation with prolonged drainage. Complications are frequent.

Archives of Neurology and Psychiatry, Chicago

27: 1-247 (Jan.) 1932

*Progressive Pallidal Degeneration: New Clinicopathologic Syndrome. N. W. Winkelman, Philadelphia.—p. 1.
*Certain Functions of Roots and Ganglions of Cranial Sensory Nerves. W. E. Dandy, Baltimore.—p. 22.
Intracerebral Vascular Nerves. W. Penfield, Montreal, Canada.—p. 30.
*Osteitis Fibrosa, Cystica of Skull, Associated with Hemianopia and Psychotic Symptoms. H. D. Palmer, R. Harrow, Philadelphia, and L. A. Schwartz, Detroit.—p. 45.
*Peripheral Nerves: Anatomic and Pathologic Considerations. G. B. Hassin, Chicago.—p. 58.
*Syndrome of Polyneuritis with Facial Diplegia. E. W. Taylor and C. A. McDonald, Boston.—p. 79.
Neurosomatic Deterioration in Epilepsy: Clinicopathologic Contribution to the Concept, with Report of Two Cases. M. B. Hodskins and P. I. Yakovlev, Palmer, Mass.—p. 113.
*Epileptic Convulsions of Dementia Paralytica: Their Relation to Sclerosis of Cornu Ammonis. H. H. Merritt, Munich, Germany.—p. 138.
Distribution of Calcium Between Blood and Cerebrospinal Fluid in Sleep Induced by Diallyl-Barbituric Acid: Experimental Study. S. Katzenelbogen, Baltimore.—p. 154.
Ephedrine Circulatory and Glycemic Reactions in the Psychoses. K. E. Appel and H. D. Palmer, Philadelphia.—p. 159.

Progressive Pallidal Degeneration.—Winkelman describes two cases with an unusual syndrome occurring in brothers, in one of whom a pathologic study of the nervous system was made. For this syndrome he suggests the name progressive pallidal degeneration. It consists of a progressive rigidity, which begins in the lower limbs and eventually involves the entire body. In the author's patients, retinitis pigmentosa was present as evidence of a familial condition. Pathologically, the same sort of involvement was present in the pallidum and in the reticular portion of the substantia nigra. One case in which a pathologic study was made further advances the idea that the pallidum and reticular portion of the substantia nigra are phylogenetically and ontogenetically similar. The name "pallidal system" is suggested for these two structures. The author believes that rigidity without tremor may be the only clinical manifestation of involvement of the pallidal system.

Cranial Sensory Nerves.—Dandy believes that paroxysmal pain of the type observed in the trigeminal and glossopharyngeal nerves is just as positive evidence of origin in a higher sensory level as a clonic convulsion is evidence of origin in a higher motor level. And just as one cannot produce a clonic convulsion by a lesion on or stimulation of a peripheral motor nerve, so one cannot produce a paroxysmal pain by a lesion of a peripheral sensory nerve. A chance observation on a sensory cranial nerve appears to lend support to, and perhaps to amplify, these conclusions. During an operation on a hypophyseal tumor, the right optic nerve was accidentally divided through somewhat more than half of its transverse extent when the line of vision was momentarily obscured by the handle of a curet. The cut in the nerve was oblique and extended anteriorly and outwardly for a distance of about 1 cm. from a point on the inner side of the nerve, about 2 mm. anterior to the chiasm. Anteriorly, the cut extended somewhat beyond the midline of the nerve. Prior to operation, the patient had shown a bitemporal hemianopia for form and color in each eye. The visual acuity was slightly less on the side of the operation (right). Forty-eight hours after the operation the fields of both eyes had in large part returned, and before the patient left the hospital, two weeks later, repeated perimetric tests by different examiners gave normal fields for form and color in both eyes, and the visual acuity was normal. There was no scotoma. Not the slightest defect of vision could be detected in the affected eye at any time. To test the results as far as possible, an experiment was made on a dog as follows: The outer half of the left and the inner half of the right optic nerves were sectioned immediately in front of the chiasm. Several days after the operation, the dog was tested by rapid movement through a narrow irregular path. Although a right homonymous hemianopia would have been the expected result of the experiment, the dog rapidly negotiated the path through the laterally placed impediments on either side with perfect ease. Although the animal was tested repeatedly, there was no tendency to run into objects on the side on which blindness might have been expected. Although the result in this canine experiment apparently harmonizes with the negative human result, there still remains a doubt, because the dog may be able to compensate for loss of vision by rapidly shifting the eyes and neck. When a rough test of the fields of vision was made by thrusting an object toward the eye, vision seemed to be unaffected; but in this respect again the test is too crude to be dependable. As a matter of fact, the negative results of hemisection of the optic nerve are almost precisely similar to those attending hemisection of the trigeminal nerve. The author realizes that these results, if correct, are difficult if not impossible to harmonize with an inflexible neuron doctrine.

Osteitis Fibrosa Cystica of Skull.—Palmer and his associates report a case of localized osteitis fibrosa cystica resulting from an injury to the skull in infancy and giving rise to neurologic symptoms twelve years after the occurrence of the trauma. The etiologic rôle of the trauma is significant since recent literature has tended to designate the generalized form as dependent on parathyroid hyperplasia and the local type as determined purely by trauma. Yet it is obviously rare that bone injury alone leads to the formation of cystic areas of osteitis. In the light of recently established relationship between endocrine imbalance and the malacias, it may be conjectured that there are conditioning endocrine factors in patients who develop cystic bone lesions following a trauma, resulting in a disordered metabolism and predisposing to anomalous repair with typical cyst formation. Focal compression of the right occipital pole by the intrusion of the inner wall of the bone cyst produced a lesion of the calcarine cortex, evidenced by the incomplete left homonymous hemianopia. Irritation of the visual cortex in this area occasioned visual hallucinatory phenomena. The similarity between the picture presented by the authors' patient and that of patients with tumors of the occipital lobe is worthy of emphasis. The differential diagnosis rested largely on the roentgenologic observations.

Peripheral Nerves.—According to Hassin, the structure of a peripheral nerve fiber is more complex than that of a central fiber. The Schwann cells and the Schwann membrane form one structure. The Schwann membrane separates the parenchyma from the surrounding mesodermal tissues. The Schwann cells undergo irreparable changes in wallerian degeneration and are, like the damaged parenchyma, removed from the place of the lesion. As such cells cease to exist, new nerve fibers cannot be produced from them, as has been maintained by the antineuronists. The Schwann cells seen in a peripheral sector evidently come from the central stump and accompany the outgrowing new fibers. The endoneural cells growing in both central and peripheral stumps merge to form cell cordons, which constitute the proper conducting pathways for the outgrowing nerve fibers. Such cordons not only assure proper pathways for the growing nerve fibers but assist in their metabolism by removing the products of the latter. The absence of such syncytial structures in the brain is probably the cause of the failure of central fibers to regenerate.

Polyneuritis with Facial Diplegia.—Taylor and McDonald report sixteen cases of polyneuritis, fourteen with facial diplegia, one without definite facial paresis and one of double facial involvement and paresis of other cranial nerves without involvement of the extremities. From a study of these and other cases reported, it is evident that the syndrome is of

relatively frequent occurrence, that it is sporadic and never appears in epidemic form, and that it is not confined to adult life. The etiology has not been definitely determined. The signs of infection are slight and often entirely absent. A febrile onset is inconstant. No fixed latency period, therefore, can be determined. The symptomatology, apart from the somewhat arbitrary coincidence of facial diplegia and general peripheral neuritis or neuronitis, is varied. No constant relationship exists between the appearance of the facial paresis and the more general signs of neuritis. The duration of the disease is from one or two weeks to several months. Death, from respiratory involvement, is rare. Complete recovery is the usual outcome. Occasionally, full facial control does not return. Pathologic changes are of the nature of a diffuse inflammation, involving especially peripheral neurons, the cord and brain stem to a lesser extent and the cortex slightly if at all. The cerebrospinal fluid varies from normal to a condition characterized by a pronounced increase in total protein with slight or often no increase in the number of cells (albuminocellular dissociation—Guillain).

Convulsions of Dementia Paralytica.—Merritt presents evidence showing that sclerosis of the cornu ammonis is of vascular origin. He reports thirty cases of dementia paralytica with sclerosis of the cornu ammonis; the incidence of epileptiform phenomena was found to be 90 per cent. No evidence of an organic vascular occlusion was found in these cases, and there was no apparent causal relation between the sclerosis and the inflammatory reaction around blood vessels.

Canadian Medical Association Journal, Montreal

26: 1-140 (Jan.) 1932

Some Aspects of Rickets. E. A. Park, Baltimore.—p. 3.
Spondylolisthesis. B. Mooney, Edmonton.—p. 16.
*Coronary Thrombosis: Clinical and Pathologic Study. J. C. Meakins and W. W. Eakin, Montreal.—p. 18.
*Angina Pectoris Occurring in Course of Certain Anemias. N. B. Gwyn, Toronto.—p. 26.
*Studies in Cholesterol Metabolism: I. Physiologic Variations in Blood Cholesterol. J. M. McEachern and C. R. Gilmour, Winnipeg.—p. 30.
What is New in Tuberculosis? D. A. Stewart, Ninette.—p. 34.
Scoliopathexis. E. L. Pope, Edmonton.—p. 40.
*Leukorrhea. L. C. Conn, Edmonton.—p. 48.
*Acute Appendicitis: Study of Four Hundred and One Cases. J. McKenty, Winnipeg.—p. 50.
A Five-Year Review of Pulmonary Complications Following Operation. C. C. Stewart, Montreal.—p. 55.
Mental Troubles of Fifth and Sixth Decades. E. C. Menzies, Verdun.—p. 59.
Ultraviolet Radiation in Its General Application to Disease. W. K. Russell, London, England.—p. 62.
Notes on a Small Epidemic of Infantile Paralysis Occurring in Country Practice. C. B. Cameron, Petitie Riviere, N. S.—p. 65.

Coronary Thrombosis.—Meakins and Eakin state that the treatment of coronary thrombosis is the same as that of thrombosis elsewhere. An essential feature is the allowance of time not only that adaptation to the injury may be acquired but also that anastomosis may take place. Therefore, rest is of the greatest importance. This is rather difficult at times to insist on, as the acute symptoms of coronary occlusion comparatively rapidly disappear, and the patient cannot understand why a prolonged period of absolute bed-rest is insisted on. A firm attitude and judicious instillation of fear is therefore strongly indicated. The use of digitalis is at first to be recommended but seldom. As time passes and symptoms of circulatory failure develop, it is then indicated. In the rare case of ventricular tachycardia, quinidine would be indicated; otherwise medication, apart from the use of morphine during the acute attack, would logically have but little value. The most difficult period of the treatment comes when the patient is allowed more liberty and activity. It is impossible to lay down hard and fast rules governing this. It is a question of individual cautious trial and experiment. The easy production of dyspnea and fatigue are contraindications for liberty. If the patient is intelligent, much can be done with his cooperation. When signs of congestive circulatory failure develop, the cases must be handled in exactly the same manner as when they are due to other causes. The occurrence of repeated thrombosis must always be borne in mind and must govern one not only in the prognosis but also in the treatment.

Angina Pectoris in Anemia.—According to Gwyn, the results of treatment in cases of "anemic angina" would seem to indicate that the anemia plays at least an important part in the production of the cardiac symptoms. Transfusion has apparently cured several patients almost at once, and it would seem that by the building up of the blood condition a severe angina may disappear. Whether one should conclude from this that one can close one's eyes to the possibility of coexisting coronary disease is of course another question. By relieving the anemia one has, of course, lessened considerably the degree of anoxemia, and if the anemia has been permanently done away with, a heart might well carry on even with partially obstructed coronaries. Any aid that might be expected from the development of a collateral circulation has probably been discounted by the time the patient appears before the physician.

Cholesterol Metabolism.—McEachern and Gilmour find wide variations in the five-hour blood cholesterol curve in twenty-eight normal fasting persons. Such variations render single or haphazard studies of blood cholesterol of doubtful value. There was no evidence of cholesterol absorption or effect on the blood level in twelve normal persons given large doses of this substance.

Leukorrhea.—Conn emphasizes the fact that up to the present not much attention has been paid to the monilia or yeast fungus as a cause of leukorrhea. The yeast fungus may be present without causing any symptoms. As a rule it does not cause much discharge, but the reaction of the vagina is usually highly acid. This infection may also be present in pregnant women. Parous women are more often infected than nulliparas. The symptoms caused are itching, burning and smarting of the lower vulva and vagina. Digital examination, speculum examination, and sexual intercourse may be painful. The organism may be found by the ordinary examination under the microscope, or one may stain it. It may also be grown in culture. The treatment recommended by the author is 1 per cent gentian violet in aqueous solution. Alkaline douches are also advised.

Acute Appendicitis.—McKenty presents a study of 401 consecutive cases of acute appendicitis showing satisfactory results in the uncomplicated cases and in the cases with localized peritonitis and abscesses, and unsatisfactory results in 57 cases of diffuse peritonitis. A review of reports published since 1920, covering 17,916 cases, shows that among British and American surgeons the average mortality is 6 per cent and that 60 per cent of the total deaths are due to diffuse peritonitis. Immediate operation in diffuse peritonitis of appendical origin has a mortality of 31.9 per cent. The author believes that whether the results under the Ochsner-Sherren plan of treatment are better or worse cannot be ascertained from a study of the literature. The followers of this plan have not published statistics which would enable the profession to judge of its merits.

Journal of Clinical Investigation, Baltimore

11: 1-248 (Jan.) 1932

*Studies on Mode of Action of Irradiated Ergosterol: I. Its Effect on Calcium, Phosphorus and Nitrogen Metabolism of Normal Individuals. W. Bauer, A. Marble and Dorothy Claflin, Boston.—p. 1.
*Id.: II. Its Effect on Calcium and Phosphorus Metabolism of Individuals with Calcium Deficiency Diseases. W. Bauer and A. Marble, Boston.—p. 21.
*Id.: III. Effect of Irradiated Ergosterol Administration on Formation of Bone Trabeculae. W. Bauer and A. Marble, Boston.—p. 37.
Id.: IV. In Hypoparathyroidism. W. Bauer, A. Marble and Dorothy Claflin, Boston.—p. 47.
Movement of Fluid Through Human Capillary Wall in Relation to Venous Pressure and to Colloid Osmotic Pressure of Blood. A. Krogh, E. M. Landis and A. H. Turner, Copenhagen, Denmark.—p. 63.
Plasma Proteins in Relation to Blood Hydration: VII. Note on Proteins in Acute Nephritis. J. P. Peters, F. S. Bruckman, Anna J. Eisenman, Pauline M. Hald and A. M. Wakeman, New Haven, Conn.—p. 97.
Id.: VIII. Serum Proteins in Heart Disease. S. A. Payne and J. P. Peters, New Haven, Conn.—p. 103.
Id.: IX. Serum Proteins in Terminal Stages of Renal Disease. J. P. Peters, F. S. Bruckman, Anna J. Eisenman, Pauline M. Hald and A. M. Wakeman, New Haven, Conn.—p. 113.
Variations in Serum Calcium, Protein and Inorganic Phosphorus in Early and Late Pregnancy, During Parturition and Puerperium, and in Nonpregnant Women. W. F. Oberst and E. D. Plass, Iowa City.—p. 123.
Effect of Liver and Commercial Liver Extract on Body Weight, Red Blood Cells, and Reticulocytes of Normal Rats. Janet M. Vaughan and Gulli Lindh Muller, Boston.—p. 129.

Studies in Congestive Heart Failure: XV. Reflex Versus Chemical Factors in Production of Rapid Breathing. T. R. Harrison, J. A. Calhoun, G. E. Cullen, W. E. Wilkins and C. Pilcher, Nashville, Tenn.—p. 133.
*Gastric Acidity in Normal Individuals. J. Lerman, F. D. Pierce and A. J. Brogan, Boston.—p. 155.
*Gastric Secretion in Exophthalmic Goiter and Myxedema. J. Lerman and J. H. Means, Boston.—p. 167.
Effects of Environmental Temperature, Anesthesia and Lumbar Sympathetic Ganglionectomy on Temperatures of Extremities of Animals. C. Sheard, E. H. Rynearson and W. M. Craig, Rochester, Minn.—p. 183.
Observations on Formation of Wheals: IV. Influence of Calcium Concentrations on Histamine Wheals. W. K. Weaver, H. L. Alexander and F. S. McConnell, St. Louis.—p. 195.
Id.: V. Effects of Variation of Carbon Dioxide Combining Power of Blood on Histamine Wheals. F. S. McConnell, W. K. Weaver and H. L. Alexander, St. Louis.—p. 205.
Studies of Calcium and Phosphorus Metabolism: VI. Hypoparathyroidism and Chronic Steatorrhea with Tetany with Especial Consideration of Therapeutic Effect of Thyroid. J. C. Aub, F. Albright, W. Bauer and Elsie Rossmeisl, Boston.—p. 211.
Id.: XV. In Various Metabolic and Bone Disease. J. C. Aub and R. F. Farquharson, Boston.—p. 235.

Irradiated Ergosterol: I.—Bauer and his associates describe experiments in which they noted that the administration of viosterol in small doses to normal individuals produced no constant changes in either the calcium or the phosphorus metabolism. The administration of viosterol in daily doses of 30 mg. to normal individuals resulted in an immediate increase of the fecal calcium and phosphorus excretion. The urinary calcium and urinary phosphorus were decreased. Following this there occurred a decreased fecal calcium and phosphorus excretion and an increase in the urinary calcium and phophorus excretion. The calcium and phosphorus balances were only slightly affected. Following the cessation of viosterol administration, the fecal calcium and phosphorus promptly rose and the urinary calcium and phosphorus fell slightly. The serum calcium and phosphorus of normal individuals was only slightly affected by viosterol therapy. The nitrogen excretion was unaffected by viosterol administration. No constant changes in the blood plasma cholesterol were noted during the administration of viosterol. No untoward symptoms resulted from the administration of as much as 30 mg. of viosterol a day.

Irradiated Ergosterol: II.—Bauer and Marble report that a case of osteoporosis was greatly improved by the administration of viosterol in conjunction with a high calcium diet. A case of osteomalacia with tetany secondary to faulty absorption showed immediate and lasting benefit from viosterol. Viosterol acts as a specific drug in this type of calcium phosphate disorder. No untoward symptoms were observed in either case as the result of such therapy. The action of viosterol is the same in normal individuals as in individuals with calcium deficiency diseases; namely, to increase absorption of calcium and phosphorus from the gastro-intestinal tract. If there exists a calcium phosphate deficiency of the serum as well as the bones, the additional calcium and phosphorus absorbed is retained in order to establish a normal relationship of calcium and phosphorus in the serum and thus allow the deposition of calcium phosphate in the bones. In calcium deficiency diseases in which there is a calcium phosphate deficiency of the bones only, the consequent retention is not so marked, whereas in normal individuals little or no retention takes place because the serum and bones are both normal in respect to calcium phosphate. The dose of viosterol necessary to produce such changes in the calcium and phosphorus metabolism of individuals with calcium deficiency diseases is much smaller than the amount required to produce changes in the calcium and phosphorus metabolism of normal individuals.

Irradiated Ergosterol: III.—The administration by Bauer and Marble of a high calcium diet to cats with calcium phosphate deficiency of the bones resulted in an increase in the number of bone trabeculae. This increase in the number of bone trabeculae was greater when, in addition to a high calcium diet, viosterol was given.

Normal Gastric Acidity.—In a series of gastric analyses of 200 normal patients, using histamine and alcohol as the gastric secretory stimulants, Lerman and his associates found that the average free acidity was 40.4 cc. of tenth normal acid and the average total acidity 50.1 cc. There was no correlation between age and gastric acidity. The incidence of anacidity was 13 per cent. Up to the age of 65 there was a definite correlation between age and the incidence of anacidity. Beyond this age the number of cases with anacidity dropped off and the number with hyperacidity increased. The average gastric acidity was higher in the male than in the female. Consequently females more frequently show anacidity and hypo-acidity and less often hyperacidity. The red blood cell count and hemoglobin content tended to vary directly with the level of gastric acidity. Consequently the greater the tendency to achlorhydria, the lower the red blood cell count and hemoglobin content; the greater the tendency to hyperchlorhydria, the higher the red blood cell count and hemoglobin content. From the data available in forty-one cases it seemed that there was some degree of correlation between the incidence of gastric anacidity and level of basal metabolism.

Gastric Secretion in Thyroid Disease.—Lerman and Means state that in patients with exophthalmic goiter and myxedema there is a definite lowering of the gastric acidity to about half its normal value. The incidence of achlorhydria in exophthalmic goiter is 38 per cent and in myxedema is 53 per cent. Corrected for the age distribution of a normal group, the incidence is 46 per cent and 75 per cent, respectively. The frequency of achlorhydria is out of proportion to the depression in the average acidities and suggests that other factors are also important in its causation. There is perhaps a threshold of gastric secretion, and if the secretion is depressed beyond it, anacidity results. In exophthalmic goiter there is no definite correlation between gastric acidity and such factors as age, red blood cell count, hemoglobin and level of basal metabolism. On the other hand, there is a high degree of correlation between the incidence of achlorhydria and age and basal metabolic rate and a probable inverse correlation between the incidence of achlorhydria and red blood cell count and hemoglobin. There is also a higher incidence of achlorhydria and hyperchlorhydria among males than among females. In myxedema there is an unusual tendency to anemia among patients with achlorhydria. There is indirect evidence that achlorhydria may persist in some cases at least after the primary condition has been cured. The knowledge of the gastric secretion in an individual case may be of practical importance in prevention of the development of anemia.

Kansas Medical Society Journal, Topeka

33: 1-38 (Jan.) 1932

Painful Points and Problems. E. K. Lawrence, Hiawatha.—p. 1.
Treatment of Postoperative Abdominal Distention. T. G. Orr, Kansas City.—p. 3.
Treatment of Stealing in Children. R. M. Fellows, Topeka.—p. 6.
Jaundice. E. S. Edgerton, Wichita.—p. 8.
Fatal Thrombosis Following Hypodermoclysis. R. T. Gants, Kansas City.—p. 13.

Med. Bull. of Vet. Adm., Washington, D. C.

8: 1-92 (Jan.) 1932

Study of Manic-Depressive Psychosis in Ex-Service Men. P. B. Matz and O. C. Willhite.—p. 1.
Treatment of Complication in Artificial Pneumothorax. H. T. Ivey.—p. 20.
Bronchial Spirochetosis: Case. J. A. Burket.—p. 26.
Incidence of Syphilis in Five Thousand Negro Ex-Service Men. J. B. Garrett and L. B. Smith.—p. 38.
Relation of Sphenoid Sinus to Dysfunction of Pituitary Gland. S. Bockoven.—p. 43.
*Syringomyelia. O. P. Goodwin.—p. 45.
Diagnosis of Coexisting Emphysema and Pulmonary Tuberculosis. W. C. Nalty.—p. 50.
Necessity of Immediate and Persistent Treatment in Laryngeal Tuberculosis. F. X. Suraci.—p. 53.
Pellagra: Six Cases. H. B. Fralic.—p. 56.
*Tissue Specificity of Mycobacterium Tuberculosis. W. J. Byles.—p. 61.
Use of Concentrate of Cod Liver Oil in Gelatin Pearls. E. J. Brett.—p. 63.
Full Denture Impressions. F. E. Meyer.—p. 64.

Syringomyelia.—Goodwin reports a case of syringomyelia in which twelve years elapsed from the time of onset before symptoms developed that were definite enough to warrant the diagnosis. He believes that when there is a history of nervous manifestations over a period of five, ten or fifteen years the possibility of syringomyelia should always be considered. The dissociation of touch and pain is almost distinctive, but this phenomenon is also sometimes found in neuritis, hysteria and tabes. Various cord levels are apt to be affected, and, as a

consequence, one may have various symptom complexes. Certain degenerative lesions may be present for a considerable time without being noticed, and relatively recent and sudden symptoms should not rule out the diagnosis.

Tissue Specificity of Mycobacterium Tuberculosis.—Byles describes a case of primary renal tuberculosis, confirmed by necropsy. A guinea-pig inoculated with urine from the patient developed tuberculous lesions only in the kidneys and at the inoculation point. Two guinea-pigs inoculated with material from a kidney of the first pig also showed lesions only in the kidneys and at the inoculation points. Cultures from a kidney of one of the pigs showed growth typical of Mycobacterium tuberculosis (hominis). A guinea-pig inoculated with a bacterial suspension from the cultures showed lesions only in the kidneys and at the inoculation point.

Missouri State Medical Assn. Journal, St. Louis

29: 1-50 (Jan.) 1932

Recent Additions to Armamentarium for Fracture Reduction and Retention. E. P. Heller, Kansas City.—p. 1.
Gastro-Intestinal Allergy. L. P. Gay, St. Louis.—p. 7.
One-Stage Versus Two-Stage Suprapubic Prostatectomy. D. K. Rose, St. Louis.—p. 10.
Trachoma in Missouri. C. E. Rice and J. E. Smith, Rolla.—p. 13.
White House Conference on Child Health and Protection: General Statement. B. Veeder, St. Louis.—p. 17.
Brief Abstract of Report of Committee on Growth and Development. T. C. Hempelmann, St. Louis.—p. 18.
Mental Growth and Development. P. E. Kubitschek, St. Louis.—p. 19.
Prenatal and Maternal Care. H. Ehrenfest, St. Louis.—p. 21.
Summary of Survey on Preventive Medical Service to Preschool Children. D. M. Cowgill, St. Louis.—p. 24.
Medical Social Service. Edith Baker, St. Louis.—p. 26.
Report of Subcommittee on Pediatric Nursing. Bertha Yenicek, St. Louis.—p. 28.

New England Journal of Medicine, Boston

206: 1-46 (Jan. 7) 1932

Human and Economic Problem of Chronic Arthritis. R. B. Osgood, Boston.—p. 1.
What Is Organized Medicine's Attitude Toward Public Health Administration? W. H. Ross, Brentwood, N. Y.—p. 6.
*Presence of a Distinct Insulin in Depancreatized Dogs After Pancreatectomy. G. H. Tuttle, South Acton, Mass.—p. 8.
Significance of Complement Fixation Test in Diagnosis of Gonorrhea. W. Frankman, Boston.—p. 11.
The General Practitioner on Witness Stand. C. F. Keeley, Claremont, N. H.—p. 12.
Diets in Pregnancy in Relation to Low Blood Serum Calcium Values at Lactation. H. T. French and C. E. Bolser, Hanover, N. H.—p. 14.
*Ulcer of Stomach and Duodenum. E. S. Judd, Rochester, Minn.—p. 17.

Insulin in Depancreatized Dogs.—Tuttle describes experiments in which he demonstrated that a considerable amount of dextrose oxidizes or is utilized anaerobically by the depancreatized dog. Since insulin is necessary for the oxidation of dextrose, extrapancreatic or cellular insulin must exist in the normal dog after total pancreatectomy. The amount of this insulin gradually increases under the stimulation of the high blood sugar as the experiment progresses. The reason this insulin can increase thus is that the dog was not naturally diabetic at the time of operation, so that his cellular insulin can be normally increased by carbohydrate stimulation. If he had been naturally diabetic, no such increase or one much less, in proportion to the severity of the diabetic state, would have resulted (because the mechanism for producing cellular insulin may also be deficient in many diabetic states). Muscular action uses up considerable amounts of blood sugar anaerobically without the need of the assistance of insulin; and consequently in diabetic cases in which there is a deficiency of insulin such exercise takes the place of a certain amount of insulin in keeping the blood sugar near normal.

Ulcer of Stomach and Duodenum.—Judd believes that the final word concerning gastric and duodenal ulcer has not yet been spoken. The multiplicity of hypotheses advanced to explain their origin indicates that many factors play a part, differing perhaps in each case. In the presence of conflicting views, regarding the origin of ulcer, different forms of treatment are justified only on the basis of experience. A sharp line must be drawn between gastric and duodenal ulcer. The problem of carcinoma enters into the consideration of gastric ulcer. No matter how small a percentage of gastric ulcers are malignant or will become malignant, this possibility adds to the seriousness of the disease. Carcinoma almost never occurs in the first portion of the duodenum, so that the question of malignancy need not enter into consideration in the treatment of these cases. Many duodenal ulcers heal permanently under medical treatment. Any one with a duodenal ulcer is entitled to a trial of this type of treatment and to continue with the regimen so long as it is helpful. It is not a good plan to operate when the lesion is bleeding. If the patient has had one hemorrhage only and is free from symptoms at the time of the examination, it is not necessary or advisable to operate immediately. If he has a recurrence of symptoms, an operation may be indicated. If it becomes necessary to operate, particularly because of repeated severe hemorrhages, it is imperative to remove the ulcer if it can be done thoroughly by local excision, removing part of the muscle of the pyloric sphincter. If this cannot be accomplished because of the local condition, it is advisable to resect the stomach with the ulcer if possible. The local operation of excision of ulcer, with the cap of the duodenum and a considerable part of the pyloric sphincter, completing the operation as a gastroduodenostomy, is the operation of choice in all cases of ulcer of the duodenum and in ulcers on the gastric side near the pylorus. The radical operation is preferable in cases of gastric ulcer, particularly if there is considerable associated gastritis. Gastro-enterostomy gives satisfactory results for obstructing ulcer in the duodenum of patients past middle age. There is sure to be complete relief of symptoms, with little probability of the formation of secondary ulcers. A person who has once had an ulcer must always be considered as having an ulcer potentiality. Although it is not necessary for him to hold too rigidly to dietary restrictions, he should be very cautious about his diet and activities at any suggestion of a return of his former symptoms. If he is willing to conform, there is no reason why he cannot be made comfortable and live a useful and active life; if he does not follow this plan, the recurring trouble is likely to be much more difficult to control than the original trouble.

New York State Journal of Medicine, New York

32: 1-60 (Jan. 1) 1932

Agranulocytic Angina: General Discussion of Disease and Treatment. B. J. Delatour, New York.—p. 1.
Effect of Roentgen Ray on White Blood Cells. W. H. Stewart and H. E. Illick, New York.—p. 9.
Diagnosis of Coronary Occlusion. A. M. Wedd, Clifton Springs.—p. 11.
Study of Results Obtained by Use of Artificial Ultraviolet Radiation in Two Hundred Nontuberculous Cases. S. I. Muller, Long Island City.—p. 16.

Public Health Reports, Washington, D. C.

47: 1-74 (Jan. 1) 1932

Rates of Physical Impairments in Twenty-Eight Occupations, Based on Seventeen Thousand Two Hundred and Ninety-Four Medical Examinations. R. H. Britten and Jennie C. Goddard.—p. 1.
Sex Differences in Prevalence of Dental Caries: Based on Twelve Thousand Four Hundred and Thirty-Five Oral Examinations by Dental Personnel in Georgia, Illinois, Missouri and Hagerstown, Maryland. Amanda L. Stoughton and Verna Thornhill.—p. 26.

Radiology, St. Paul

18: 1-220 (Jan.) 1932

Lung Abscess. W. A. Hudson, Detroit.—p. 1.
Roentgen Ray in Diagnosis and Prognosis of Upper Urinary Tract Infection. H. W. Plaggemeyer and C. G. Weltman, Detroit.—p. 23.
Fractures and Incomplete Dislocations of Mandible or Maxilla. L. Rogers, C. T. Hall and J. H. Shackelford, Detroit.—p. 28.
Intravenous Urography. R. E. Cumming, Detroit.—p. 41.
Demonstration and Significance of Nephroptosis and Urinary Stasis. H. L. Morris, Detroit.—p. 56.
*Ear Complications in Acute Craniocerebral Injuries: Study of Four Hundred and Seventy-Six Cases. E. S. Gurdjian, Detroit.—p. 74.
*Gastric Tumors. M. F. Dwyer, Seattle.—p. 80.
Diverticulosis of Colon. F. M. Groedel, Bad Nauheim, Germany.—p. 88.
Tumors of Male Breast, Based on Study of Thirty-One Cases. B. F. Schreiner, Buffalo.—p. 90.
Concept of Dosage and Definition of r Unit (Roentgen Unit). R. Glocker, Stuttgart, Germany.—p. 93.
International Comparison of Roentgen-Ray Standards. L. S. Taylor, Washington, D. C.—p. 99.

Ear Complications in Acute Craniocerebral Injuries.—Gurdjian emphasizes the fact that aural bleeding in cases of craniocerebral injury is a serious complication. The treatment is conservative in cases both with bleeding and with

cerebrospinal fluid discharge. The ear should be left alone if it has stopped bleeding. Unnecessary examination may cause the introduction of infection. In cases in which there is still some discharge, the external ear should be carefully cleansed, the wall of the external auditory canal painted with 4 per cent iodine solution, and a mastoid dressing applied either with no packing of the canal or with very loose packing. As long as the patient does not complain of earache and there are no unexplainable clinical manifestations, the less done to the patient, the better the results. A total of 476 cases of aural bleeding or cerebrospinal fluid leakage from the ear are reported by the author. The right ear was involved in 36.5 per cent of the total group, and the left ear, in 43.1 per cent; there was bilateral bleeding in 20.6 per cent of the cases. In the group examined by roentgen ray, positive observations in cases with unilateral bleeding were 93 per cent, and in cases with bilateral bleeding, 98 per cent. Otitis media was found in nine cases, meningitis in four, and mastoiditis in three. The mortality was 37.1 per cent with right-sided, 38.5 per cent with left-sided, and 67.3 per cent with bilateral discharge.

Gastric Tumors.—According to Dwyer, the roentgenologist seldom fails to diagnose a gastric cancer; yet, owing to the location of the growth and the failure to recognize early signs of the lesion, the majority of gastric cancers are far advanced at the time of diagnosis. A patient who gives a history of chronic dyspepsia and whose gastric secretions show the presence of free hydrochloric acid may have a cancer of the stomach. This patient is just as deserving of a detailed study to determine or to rule out cancer as is one who consults a physician on account of comparatively recent development of gastric symptoms. In the author's series of patients with gastric carcinoma 38 per cent gave a history of dyspepsia averaging ten years before the onset of symptoms characteristic of cancer. Seventy per cent of these patients had free hydrochloric acid in their gastric contents. The author believes that the value of careful palpation of the partially filled stomach during fluoroscopy cannot be emphasized too strongly.

Rhode Island Medical Journal, Providence

15: 1-18 (Jan.) 1932

Practical Value of Blood Chemistry, Especially in Nephritis. J. P. O'Hare, Boston.—p. 1.
Important Points in Practical Treatment of Diabetes. A. M. Burgess, Providence.—p. 4.
Industrial Radium Poisoning with Bony Changes: Case. R. Hammond, Providence.—p. 6.

Tennessee State Medical Assn. Journal, Nashville

25: 1-42 (Jan.) 1932

Reconstructive Measures in Urologic Surgery. R. A. Hennessey and A. D. Mason, Memphis.—p. 1.
Frankness in Medicine. C. S. McMurray, Nashville.—p. 12.
Bellyaching About Bellyache; or, What Abdominal Pain Should Mean to the Surgeon. R. A. Barr, Nashville.—p. 17.
Absorption Test in Sinus Disease and Allergy. J. H. Lipsey, Memphis. —p. 21.
Value of Roentgen Ray in Obstetrics. P. C. Schreier and J. R. Reinberger, Memphis.—p. 24.

Western J. Surg., Obst. and Gynecology, Portland, Ore.

40: 1-51 (Jan.) 1932

Early Diagnosis of Acute Intestinal Obstruction, with Comments on Pathology and Treatment: Report of Successful Decompression of Three Cases of Mechanical Bowel Obstruction by Nasal Catheter Suction Siphonage. O. H. Wangensteen, Minneapolis.—p. 1.
Primary and Secondary Repair of Cleft Lip. W. S. Kiskadden and E. F. Tholen, Los Angeles.—p. 18.
*Advisability of Early Operation for Duodenal Ulcer. D. C. Balfour, Rochester, Minn.—p. 28.
*Carcinoma of Stomach. B. B. Davis, Omaha.—p. 31.
When Should a Tuberculous Kidney Be Removed? V. C. Hunt, Los Angeles.—p. 40.

Operation for Duodenal Ulcer.—Balfour calls attention to the fact that the selection of cases of duodenal ulcer for early operation would be greatly simplified if it were possible to predict with any accuracy the course of the disease in the individual case. For example, if one could know that the best of repeated medical treatments, and dietary regimen, would fail to control the symptoms of duodenal ulcer, much time, money and suffering would be spared the patient by early operation. As yet there are no satisfactory criteria on which to base predictions in the uncomplicated case. In the complicated case, that is, when the severity of symptoms or the radiation of pain indicates that extraduodenal involvement has occurred, intestinal hemorrhage, or when motor impairment can be demonstrated, early operation is clearly the best course for the patient to pursue, unless it is definitely contraindicated. In the absence of such complications, there are certain conditions under which operation may properly be advised for early uncomplicated duodenal ulcer. There are two groups of cases of uncomplicated duodenal ulcer in which early operation holds definite advantages for the patient. The first of these is represented by the patient who, in spite of conscientious effort to carry out well directed treatment, fails completely to control the symptoms. These patients are usually young, and at the most important period of their careers, and elimination of the recurring disability at such a time would be greatly to their advantage. In the second group, the patient, because of his unwillingness or inability to carry out the necessary regimen, is subjected to the recurrences of attacks which are characteristic of the disease. If such attacks are prolonged and disabling, nothing is gained by delaying surgical treatment. These two groups comprise a considerable number of duodenal ulcers, and the author is convinced that carefully applied surgical measures constitute the best method of dealing with the disease at this stage.

Carcinoma of Stomach.—According to Davis, it is highly probable that in chronic atrophic gastritis has been discovered a cause of many of the insidious cases of cancer of the stomach which have usually been spoken of as "primary" cancer. Chronic gastric ulcers offer a basis for an undetermined proportion of gastric cancers, and recognition of this fact may result in earlier operation in these cases. Therefore both ulcer prevention and ulcer cure and gastritis prevention and gastritis cure are a part of cancer prevention and cancer cure. There is already enough known about carcinoma of the stomach to make possible the cure of a much larger proportion of persons with this disease than was formerly possible.

West Virginia Medical Journal, Charleston

28: 1-48 (Jan.) 1932

Osteomyelitis. R. U. Drinkard, Wheeling.—p. 1.
Infections of the Petrous Pyramid. C. H. Smith, New York.—p. 7.
Ophthalmoscope and General Practitioner. V. T. Churchman, Sr., Charleston.—p. 15.
Pneumonoconiosis: Partial Review of Literature. W. L. Cooke, Beckely. —p. 19.
Use of Calcium in Asthma. E. Podolsky, Brooklyn.—p. 23.
Type and Extent of Operation for Cancer. R. J. Behan, Pittsburgh. —p. 25.

Wisconsin Medical Journal, Madison

31: 1-67 (Jan.) 1932

*Acute Mastoiditis: Comparison of Operative and Roentgen-Ray Observations. H. B. Hitz, Milwaukee.—p. 15.
Clinical Aspects of Oxygen Want. R. M. Waters, Madison.—p. 20.
What I Think About Cancer. K. W. Doege, Marshfield.—p. 24.
Combined Roentgenologic and Clinical Differential Diagnosis of Benign and Malignant Lesions of Stomach. B. R. Kirklin and G. B. Eusterman, Rochester, Minn.—p. 28.
Eye Diseases from Nasal Causes. A. Bardes, Milwaukee.—p. 30.

Acute Mastoiditis.—Hitz emphasizes the fact that acute mastoiditis is always potentially a serious matter from its inception and should be promptly recognized and efficiently handled. A general physical survey should always be made including roentgen examination of temporal bones, frequent eye-ground examinations, blood count, and urinalysis and, on the slightest suspicion of complication, blood cultures and spinal fluid examination. Operation when it has been decided on should be promptly done and completely executed. Half done measures are worse than useless. Secondary operations may be considered to be evidence of poor primary work and of poor judgment. They greatly add to the danger of life and prolong the period of recovery. Overlong preoperative observation also makes possible the subsequent danger to hearing, for the longer a discharge continues from a middle ear the more are inflammatory residues likely to be a disturbing element to future hearing. Properly taken roentgenograms are invaluable in determining the extent of the cellular development and often the degree and possible extent of the infected area. They should always be taken whenever and wherever the means of so doing are available.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

12: 357-460 (Dec.) 1931

*Potency and Distribution in Serum Fractions of Antiviral Body Obtained by Immunization of Horse with Vaccinia Virus. J. C. G. Ledingham, W. T. J. Morgan and G. F. Petrie.—p. 357.
Adsorption Experiments with Rous Sarcoma Virus. Antionette Pirie. —p. 373.
Experiments on Production of Tumors on Somatic Mutation Hypothesis. J. C. Mottram.—p. 378.
An Investigation into Streptococci Found in Certain Diseases of Skin. J. Kinnear.—p. 384.
*Serum Treatment of Anaerobic (Vibrion Septique) Infections in Mice. S. Craddock and H. J. Parish.—p. 389.
Studies on Protein-Free Suspensions of Viruses: III. Resistance to Heat and Disinfectants of Protein-Free Eluates of Bacteriophage and Fowl-Pox Virus. I. J. Kligler and L. Olitzki.—p. 393.
Experimental Observations with Low-Dose Radiation. W. R. Spurrell. —p. 402.
Filtration of Virus of Foot-and-Mouth Disease Through New Series of Graded Collodion Membranes. I. A. Galloway and W. J. Elford.—p. 407.
Some Data Concerning Infectivity, Survival and Powers of Diffusion of Virus of "Louping-Ill." J. Czarkowska-Gladney and E. W. Hurst. —p. 426.
*Studies on Rat Thyroids. A. M. Drennan, J. Malcolm and G. A. Cox. —p. 430.
Tar Cancer in Mice: III. An Apparatus for Preparation Under Standard Conditions of Highly Potent Carcinogenic Agent of Low Toxicity. A. F. Watson.—p. 441.
*Quantitative Analysis of Lethal Power of Strain of Type I Pneumococcus. G. F. Petrie and W. T. J. Morgan.—p. 447.

Potency of Serum Fractions in Antivaccinal Serum.—Ledingham and his associates secured an antivaccinal serum by hyperimmunization of the horse with the virus of vaccinia. The antiviral body is associated with the euglobulin as well as with the pseudoglobulin fractions of the serum, but not with the albumin. The euglobulin fraction contains the antibody in highest concentration per gram of protein, but its absolute amount falls below that present in the pseudoglobulin fraction. In the course of hyperimmunization pursued intermittently over a period of nine months, the natural serum of the horse exhibited variations in potency, but it was established that falls in titer could be succeeded by maximal titers in response to further stimulation. The serum when administered simultaneously with the virus proved highly effective in controlling experimental infections of rabbits with strains of virus of cutaneous and testicular origin. Though therapeutic effects from late administration of serum have not been definitely elicited in the experiments adduced, it is held that success in this direction may depend largely on dose of virus, and that further experimentation on therapeutic lines is desirable, if only to secure some valid basis for its exploitation in human infections with this virus.

Serum Treatment of Anaerobic Infections.—Craddock and Parish describe experiments on mice in which they noted that Vibrion septique antitoxic serum confers complete protection against massive doses of living culture of Vibrion septique. It is also highly effective in the prophylaxis and treatment of infections produced by washed spores with calcium chloride as activator. A concentrated antitoxin, injected intravenously or intraperitoneally in divided doses, protected from 75 to 100 per cent of mice against 100 fatal doses of spore-activator mixture. Mice nearly moribund five hours after infection recovered after the intravenous administration of antitoxin. A most important indication from this research is that, when antitoxin is used therapeutically in the treatment of anaerobic infections in man, it should be given without delay in large doses by the intravenous route.

Rat Thyroids.—Drennan and his associates attempted to produce a diet adequate for normal growth in the rat, but sufficiently low in iodine to produce thyroid change. This was best achieved by a diet of white bread and fresh milk. After a period rats on this diet developed an active type of gland, low in iodine content, and large relative to the body weight. The addition of small amounts of iodine to such a diet kept the thyroids small, colloid, and with a rich iodine content. As iodine was again omitted from the diet, the thyroids tended to enlarge and assume the active type of gland similar to those in the animals that had no iodine from the beginning.

Lethal Power of Type I Pneumococcus.—Petrie and Morgan investigated the factors that influence the lethal power for mice of a virulent type I pneumococcus culture. They noted that the density and the virulence of the culture determine its lethal power. The controllable factors that influence the test animal were likewise examined. Stocks of mice from different sources appear to show some variation in susceptibility. There is no sex factor, nor does the weight factor influence the mortality, although it modifies the survival time. A small proportion of mice—from 5 to 10 per cent—possess an innate resistance to small doses of pneumococci. A characteristic curve relating dosage to percentage mortality among mice was obtained and furnished evidence that an average lethal dose of a culture can be calculated by the use of reasonable numbers of mice; this dose contains one diplococcus. The percentage mortality, the mean death time, and the distribution of the deaths in appropriate time intervals in a group of mice that receive a definite dose of a test culture are criteria by means of which the lethal power of any culture of type I pneumococcus may be specified.

British Journal of Ophthalmology, London

16: 1-64 (Jan.) 1932

Physiology of Weeping. E. T. Collins.—p. 1.
Convergence of Human Binocular Vision. N. A. Stutterheim.—p. 20.
Two Rare Corneal Conditions: I. Acute Conical Cornea. II. Keratoconus Posticus Circumscriptus. T. H. Butler.—p. 30.
Spontaneous Cure of Cataract. T. H. Butler.—p. 35.
Diabetic Retinitis in Patient Aged Twenty-Two. P. H. Adams.—p. 38.

British Journal of Radiology, London

4: 621-736 (Dec.) 1931

*Lines of Arrested Growth in Long Bones in Childhood: Correlation of Histologic and Radiographic Appearances in Clinical and Experimental Conditions. H. A. Harris.—p. 622.
*Abrodil: Experimental Investigation. R. S. A. Heathcote and R. A. Gardner.—p. 641.
Methods of Reducing the Errors in Electrical Testing Due to Variations in Skin Resistance. H. Hartridge.—p. 652.
Radiology of Chest. E. W. Twining.—p. 658.
Summary of Paper on Effect of Split Doses of Gamma Radiation on Tissue Cultures in Vitro. F. G. Spear.—p. 680.
Fields of Radiation from Radon Seeds. H. S. Souttar.—p. 681.
Radiographic Demonstration of Vena Azygos. W. J. Mowat.—p. 690.
Measurement in r Units of Gamma Rays from Radium. W. V. Mayneord.—p. 693.
A Two-Valve Transformer Unit for Diagnosis and Therapy. W. E. Schall.—p. 711.
Calibration of Lovibond Tintometer and Actinometer for Levy-West Ultraviolet Light Pastilles. P. Wright.—p. 715.

Lines of Arrested Growth in Long Bones.—By roentgen examination, Harris has demonstrated that lines of arrested growth are of frequent occurrence in both animals and plants. In man, at the time of cessation of growth in the long bones, during the eighteenth to the twentieth years, such lines are normally laid down. In neonatal life, as a result of the catastrophic changes involved at birth, an arrest of growth concomitant with the loss of weight in the first week of life is of such frequency as to be almost a normal feature. During the whole period of growth any severe interference with metabolism, as a result of starvation, acute infection, or metabolic disease such as diabetes, induces premature senescence in growing tissues, and the fact is unfailingly registered in the structure of the bone by the production of a transverse line of arrested growth. The process of absolute cessation of growth in the long bones by cessation of proliferation in the cartilage columns, by calcification and ossification in which the transverse trabeculae are maximally developed, is a process common to the long bones of all mammals. Throughout the growth period this ultimate process of formation of a line of cessation of growth is kept in mind as it were; given any nociceptive stimulus, the process is initiated but pursued only to an extent dependent on the strength and duration of the stimulus. The process of arrest of growth in illness is a preliminary but incomplete exhibition of the ultimate cessation of growth which is the common fate of all growing animals. In certain cases the nociceptive stimulus is so severe that complete calcification and ossification of the growth cartilage occurs. This is seen in cases of children who, during the second decade, suffer severe infections in quick succession. Complete union of the

epiphyses of the long bones in boys and girls of from 14 to 16 following severe exanthems has been reported frequently, and it is an index of the fact that the growth processes in the cartilage have been finally suppressed. Any hospital outpatient department will present cases of this type, many of them labeled "infantilism," whereas they are really examples of "premature senility" of the skeleton.

Skiodan. — Heathcote and Gardner report that skiodan, given intravenously in dogs up to 7 Gm. per kilogram of body weight, is nontoxic. The speed at which the injections are made does not seem to be important. The isolated heart and intestine of the rabbit are scarcely affected by solutions of skiodan of strengths comparable to those which might occur in man after administration of the normal dose. Skiodan, in doses up to 3.33 Gm. per kilogram, given intravenously, produces only minimal changes in the blood pressure. In larger doses, up to about 7 Gm. per kilogram, a fall of blood pressure is produced, which is less pronounced and less prolonged than that previously described with iopax. Up to 3.33 Gm. per kilogram, skiodan produces no appreciable effects on the respiration. With increasing dosage, however, there is a progressive slowing of the respiration. Death is caused at about 8 Gm. per kilogram from asphyxia. No pathologic changes were observed to occur in animals which had received large doses, 7 Gm. per kilogram, on one occasion, or which had been given 1.66 Gm. per kilogram daily for six days. Again, in the organs of animals previously rendered nephritic by uranium, there were found, following the administration of large amounts of skiodan, no changes other than those produced by the action of that metal. Skiodan is excreted by the kidneys of dogs rendered nephritic with uranium, although the rate of excretion is greatly reduced from the normal. As a result, the concentration in the urine may be less than that required to produce roentgen shadows. Skiodan is efficient in making the urine radiopaque and is a satisfactory medium for urography in dogs. It is superior to iopax in the speed with which it is excreted, in the dose necessary for the production of urograms and, in the dog at least, in their quality.

Edinburgh Medical Journal

39: 1-68 (Jan.) 1932

Edward Clark Chair of Child Life and Health. C. M'Neil.—p. 1.
Myositis Ossificans Progressiva. W. F. Mair.—p. 13.
*Heart Block in Toxic Goiter: Two Cases. J. D. S. Cameron and I. G. W. Hill.—p. 37.

Heart Block in Toxic Goiter.—Cameron and Hill report two cases of heart block complicating toxic goiter and present an account of their subsequent course as followed by the electrocardiograph. The effect of various drugs and anesthetics on the condition is recorded. An association with recent throat infection was noted in each case: this relation is discussed. The comparative rarity of heart block as a feature of such goiter cases is illustrated by a series of 1,744 cases drawn from the literature.

Guy's Hospital Gazette, London

46: 1-14 (Jan. 9) 1932

Beginnings of Bright's Disease. W. Hale-White.—p. 3.
Some Cases of Excessive Calculus Formation. C. de V. Green.—p. 14.

China Medical Journal, Shanghai

45: 1131-1231 (Dec.) 1931

*Yaws and Syphilis: Problems, Clinical Studies and Experimental Evidence Concerning Their Relationship. C. M. Hasselmann.—p. 1131.
Stones of Ureter: Advantages and Disadvantages of Diagnosis by Uroselectan and Abrodil. W. S. Parsons.—p. 1155.
*A Common Physical Sign in Phthisis. H. G. Anderson.—p. 1165.
Brief Trial of Tricresol Ring Test. H. G. Anderson.—p. 1169.
Oral Conditions and General Health. A. M. Kazimirow.—p. 1170.

Yaws and Syphilis. — Hasselmann states that the fundamental biologic difference between the two spirochetes producing yaws and syphilis, respectively, rests on their different organotropism; i. e., their different behavior in the body tissue of the affected host. The two parasites are indistinguishable by morphologic staining and cultural methods so far. Spirochaeta pertenuis is ectodermotropic and not able to multiply and survive for any length of time in mesodermal layers. Spirochaeta pallida, on the other hand, invades all tissues, with preference to mesodermic tissues. This different organotropism explains the differences in the clinical course, pathology and immunologic phenomena of the two diseases. The terms primary, secondary and tertiary lesions, used in syphilis and indicating a certain sequence, should not be applied to yaws infection as they would be misleading. The successive stages of frambesial crops are most liable to overlap one another in such a way that the initial, primary lesion may persist throughout the stage of metastatic generalization and even change into a late, ulcerative form with no or only a modified metastatic crop of frambesids occurring. Immunity in both spirochetal diseases is that of antiaggressive immunity found in certain bacterial infections. It has a scale ranging from full susceptibility with unlimited propagation of spirochetes to low grade resistance with restriction of their multiplication and, finally, to full immunity in which the multiplication of the respective parasites is completely suppressed, and the spirochetes die out after their lifetime has elapsed. Heterologous immunity (cross-immunity) exists between yaws and syphilis, developing, however, much later than the homologous immunity. Coexistent infection with yaws and syphilis, as shown by clinical and experimental experience, is possibly due to the late onset of cross-immunity, thus explaining the presence of syphilitic lesions of the cardiovascular as well as of the central nervous system in patients showing at the same time frambesial efflorescences. There are no fundamental differences between the two spirochetal diseases in regard to serology and therapy, though in yaws infection arsphenamine is most efficacious with bismuth compounds far behind and mercury and potassium iodide of little or no value. Injection of killed spirochetal material produces the same serologic and immunologic phenomena as natural infection. Vaccine therapy, therefore, opens new lines for the preventive treatment of metasyphilis. On the basis of his observations the author concludes that, though belonging to the same group of spirochetosis, striking differences in the clinical course, the morphologic appearance and the histopathology of the lesions, general pathology and immunology —all of which are explained by the different tropism of the two respective parasites—prove along with epidemiologic reasons that framboesia tropica and syphilis are two distinct and separate disease entities.

A Common Physical Sign in Phthisis.—In 97 per cent of more than 500 cases of tuberculosis of the lungs and their hili Anderson heard a bruit over the subclavian triangles; in 3 per cent of the cases he heard a similar bruit over the first part of the subclavain arteries. The bruit resembled the one heard over the brachial artery as the pressure in the cuff is released during a blood pressure determination. It is unassociated with any cardiac bruit or with similar bruits which may be heard in any other of the branches of the aorta. Its intensity increases in expiration and is also increased by increased pressure of the stethoscope chest-piece. The intensity is also apt to vary somewhat from examination to examination. When present there have never been lacking other evidences of tuberculous infection of the lung apexes or their hili. In one third of the cases the bruit was bilateral; in rather more than one half it was found only on the left side, and in rather less than one sixth it was present only on the right side. In about one tenth of the cases in which it was unilateral it was present on the side opposite to that of the more severely affected lung. In cases in which this bruit was heard, hilar involvement could also be detected by percussion in more than half of the cases. Wasting or abnormally good development of the overlying muscles appeared to have no influence on the intensity of the bruit; indeed, its frequency in advanced cases of phthisis was only half that found in the whole series, and the frequency in ambulant cases twice that in hospital cases. The author designates this auscultatory sign of tuberculosis as the mediostino-arterial bruit.

Japanese Journal of Gastroenterology, Kyoto

3: 281-343 (Dec.) 1931

Pigment Excreting Function of Liver in Experimental Disturbance of Kidneys. T. Matsuda.—p. 281.
Excretory Function of Liver: I. Uric Acid Excreting Function of Liver. T. Matsuda.—p. 293.
Id.: II. Influence of Autonomic Nerve Poisons on Uric Acid Excreting Function of Liver. T. Matsuda.—p. 308.
Urea Excreting Function of Liver: I. Excretion at Normal Times and Relationship Between Liver and Kidneys. M. Sakai.—p. 316.
Id.: II. Influence of Autonomic Nerve Poisons. M. Sakai.—p. 329.

Annales de Dermatologie et de Syphiligraphie, Paris

2: 1241-1388 (Dec.) 1931

*Erysipeloid: Transmission of Swine Erysipelas to Man. G. Belgodere.—p. 1241.

Erysipeloid.—Belgodere discusses the inadequacy of the term "erysipeloid," reviews the history of the disease, describes a personal case, and outlines the general characteristics and treatment of the disorder. Slight lesions allow the infecting bacillus to obtain a foothold and after an incubation period of one or two days erythema is the first symptom noted. This erythema occupies generally the dorsal aspect of the fingers or hand but may invade the palmar aspect and is of a deep wine color, nonelevated, clearly delimited and serpiginous, painless and more or less itchy. This period lasts about ten days. In serious cases infiltration may become more pronounced with consequent swelling of the parts; lymphangitis may appear with involvement of the corresponding lymph nodes, and even generalized infection may set in. Phalangeal arthritis is a frequent complication. Differential diagnosis is easily made from erysipelas, lymphangitis and erythema multiforme by observation of the peculiar characteristics of erysipeloid. The author fully describes the causative bacillus and states that this organism offers little resistance to heat, being killed in a few minutes at from 55 to 58 C., thrives in darkness, wet ground and water and is quickly destroyed by light and desiccation. Although the ordinary infections in man are usually of benign form, serious consequences and even death may follow contamination by cultures or by laboratory and vaccination accidents. Bacteriologic diagnosis attempted from a drop of blood taken from the border of the erysipeloid plaque usually results in failure; examination of the serous exudate from a blister or from lesions due to scratching is more likely to produce the desired result; histologic sections made from a piece of skin, especially if previously kept in a medium favorable to the reproduction of the bacillus, offer the best chances of success. The author discusses the prevalence of erysipeloid due to contact with marine fish and crustaceans, and mentions the finding of the bacillus in certain diseases of birds, poultry and sheep, and in river water, animal feces, decayed meat, dead mice, and so on. He states that it seems to be a well established fact that the bacillus of erysipeloid is only a common organism, prevalent everywhere and of unstable virulence. He outlines the study of immunity reactions made by several authors and finds proof of the production of exotoxins by the bacillus. Treatment of benign erysipeloid is limited to antiseptics, emollients or resolvents, especially sulphonated bitumen ointments; serious infections call for specific medication by serotherapy or vaccine therapy, which has been so successful in swine erysipelas. The author closes with the following adequate definition of the disease: Erysipeloid is a cutaneous disorder due to inoculation in the dorsal aspect of the hand of a special bacillus, called the bacillus of swine erysipelas because it is the pathogenic agent of this disease, but this bacillus is very prevalent and lives as a saprophyte on substances of animal origin and also on other animals whose contact may cause contamination.

Archives de Médecine des Enfants, Paris

34: 701-777 (Dec.) 1931

*Measles and Tuberculin Cutireaction. P. Lereboullet and P. Baize.—p. 701.

Mechanism of Immunization by Calmette's Vaccine. B. Frias and E. J. Roldan.—p. 713.

Measles and Tuberculin Cutireaction.—Lereboullet and Baize assert that other allergic reactions besides the tuberculin cutireaction can be modified in the course of measles. During the exanthem in measles, changes have been noted in the Wassermann reaction, the Widal reaction and even simple intradermal reactions to foreign proteins. However, the Schick test is not modified. Measles is not the only infection capable of rendering negative a positive tuberculin cutireaction; others are influenza, whooping cough, typhoid, scarlet fever, german measles, chickenpox, diphtheria. Some of these are not accompanied by the slightest exanthem. Measles is the only disease that almost constantly suspends tuberculous allergy, whereas the other diseases, whooping cough, pneumonia, and typhoid show anergy only in exceptional cases (usually in the child); however, influenza, related clinically with measles, frequently modifies allergic states. The authors believe that the change from positive to negative of a cutireaction during measles is a proof of a temporary giving way of the allergic state and a local factor is responsible. This local factor is a catarrhal inflammation of the respiratory tract that causes engorgement and congestion of the corresponding lymph nodes, particularly the tracheobronchial ones. Under the influence of bacteria and their toxins, the old tuberculous foci are modified, the caseous tissue is softened, and the encystment becomes less marked; the bacilli multiply, mobilize, pass into the blood circulation and invade the body. The secondary infection thus acts mechanically by provoking the infection, the suppuration and the softening, of the bronchial lymph nodes. At the same time the phagocytic activity is decreased and the body resistance for the tuberculous infection becomes feeble. In summary, the positive tuberculin cutireaction disappears more completely and suddenly in measles than in any other disease, with the possible exception of influenza. The phenomena can only be the result of a truly specific disease and can be explained in the giving way of the protective immunity for tuberculosis.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

47: 1795-1828 (Dec. 7) 1931

Bismuth Agranulocytosis. A. Sézary and G. Boucher.—p. 1795.

Primary Gonococcal Meningitis Treated by Autolysate Vaccine. P. Émile-Weil, Duchon and Bertrand.—p. 1799.

Gonococcal Meningitis: Case. F. Coste, E. Rivalier and F. Layani.—p. 1803.

*Removal of Parathyroid Adenoma for Diffuse Lesions and Decalcification of Bones. E. May and J. A. Lièvre.—p. 1808.

New Contribution to Therapeutic Use of Bismuth Subnitrate and Kaolin. G. Hayem.—p. 1819.

Removal of Parathyroid Adenoma for Diffuse Lesions and Decalcification of Bones.—May and Lièvre review the history of a typical case in which surgical suppression of a parathyroid adenoma arrested immediately the decalcification processes and a considerable improvement was noted in the clinical, humoral and roentgen signs. The patient gave a history of an attack of renal colic four years before and presented osseous pains, extreme sensibility of the skeleton, spontaneous fractures, tumefactions, all leading to absolute immobilization and impotence, and intense bony decalcification demonstrated by roentgenography; the accessory symptoms were gastric crises, attacks of tachycardia and obstinate constipation; there was no hypercalcemia (the importance in diagnosis is loss of bone calcium and that is demonstrated in the calcium balance by loss of calcium in the urine and feces). Following the intervention there was a change in the calcium metabolism toward the normal and this was followed by skeletal recalcification with an improvement in the clinical manifestations. After the operation the patient had a grave attack of tetany with psychic disturbances. This was observed in many other patients. Partial parathyroidectomy does not prevent this condition. These accidents should disappear on treatment and do not materially affect the postoperative results.

Journal de Chirurgie, Paris

38: 785-943 (Dec.) 1931

*Results of Surgical Treatment in Angina Pectoris. R. Leriche and R. Fontaine.—p. 785.

Operative Technic in Amputation of Cancerous Rectum by Abdomino-perineal Route and Lowering the Colon to the Perineum. R. Soupault and R. Leibovici.—p. 816.

Surgical Treatment in Angina Pectoris.—Leriche and Fontaine assert that surgical cure of angina pectoris is possible. Three interventions have been reported: namely, the removal of all the cervical sympathetic chain with the stellate ganglion, the removal of the cervical chain to the level of the stellate ganglion, cutting the supero-external branches, and the removal of the stellate ganglion itself. The authors believe the question of the choice of an operation depends on the conservation or the suppression of the stellate ganglion, the center of the reflexes causing the crisis in angina pectoris. The results previously reported and the results (seventy-eight observations) of the present study led the authors to conclude that the extirpation of the stellate ganglion, whenever indicated, is not more dangerous than extraganglionic interventions. This intervention has succeeded when others have failed. One stellate ganglion

should first be removed and, when this seems insufficient, the other ganglion should be removed. Success depends on the choice of the proper indications.

Journal de Médecine de Lyon

12: 733-766 (Dec. 20) 1931

Anatomic Study of Malignant Pleuropulmonary Granulomatosis. M. Favre, P. Croizat and A. Guichard.—p. 733.
*Histopathology of Gastric Ulcer: Fifty-Two Gastrectomies. J. F. Martin and F. Rouquet.—p. 747.
*Nervous Forms of Malignant Granulomatosis. M. Favre, J. Dechaume and P. Croizat.—p. 757.

Histopathology of Gastric Ulcer.—Martin and Rouquet made microscopic examinations of fifty-two gastrectomy specimens. They assert that a histologic study in gastric ulcer should include material not only from the ulcerous lesions and the immediately adjacent parts, but also the gastric wall at some distance from the lesions. Their observations prove that all the tissue layers of the gastric mucosa are affected by the ulcerous condition and undergo two types of modification if the lesion has reached a sufficiently chronic state. 1. There is a process of destruction in the mucosa, primarily on the surface but with infiltration accompanied by acute, subacute or chronic types of inflammatory reactions, responsible for secondary degenerative lesions of the epithelial cells, muscular fibers, connective tissue and nervous tissue. 2. There is a process of reparation and neoformation in the entire gastric wall; in the mucosa it is supplemented by erosive lesions due to periulcerous gastritis with atrophies and cicatricial or hyperplastic type of glandular repair (diffuse glandular hyperplasia, marginal pseudo-adenomas and microcysts.) The hyperplasias of the muscularis mucosae and the muscle coat are diffuse or localized and can lead to the formation of true myomas; the hyperplasia of the serosa is of a periulcerous lipoma origin: the myomatous thickening of the vascular walls and the neuromas are the expression of the same type of hyperplasia. The provocative cause of the gastric ulcer is connected with an inflammatory process which is sufficiently slow, destructive and regenerating at the same time and often forms the tumor type: this takes the aspect of marginal adenomas, soft myomas, lipomas and neuromas but not true benign tumors of the mucosa, muscle, adipose tissue or nerves: the single inflammation is the cause of these pseudotumoral hyperplasias. The authors in their study of the stomach state that the general rules of Favre and Dechaume apply: that, in an organ with chronic inflammation, the glandular elements that remain become organized, and together with the processes of degeneration there are parallel processes of neoformation and reconstruction; inflammatory epithelial neoformations resemble adenomas morphologically but nevertheless are not benign tumors. Nonepithelial tissues under the influence of chronic inflammation can also undergo hyperplasia and take on pseudotumoral aspects.

Nervous Forms of Malignant Granulomatosis.—Favre and his co-workers assert that anatomopathologic studies prove that most frequently the nervous manifestations of malignant granulomatosis in the region of the neural axis are nonspecific lesions of the neighboring structures. The granuloma penetrates into the bony canal or develops in situ at the expense of the bone or of epidural connective tissues. The granuloma cannot penetrate the dura mater, which acts as a strong barrier against granulomatous infiltration. The neural axis presents therefore only nonspecific lesions of a toxic or mechanical character due to compression by the contiguous granulomatous neoformation. In exceptional cases (one personal observation in 1913), the granuloma invades the neural axis, which then presents specific lesions. The leptomeninges undergo granulomatous change. The cells of the granuloma infiltrate the connective tissue sheaths and finally penetrate the nerve tissue itself. Invasion can take place at a distance from the cortex by vascular metastasis. This specific involvement of the neural axis raises the question of the behavior of the oligodendroglia in this condition. There is no histopathologic proof of a primary nervous form of granulomatosis. The clinical study reveals the protean character of the nervous manifestations whose anatomopathologic substratum is so variable. The cerebral manifestations consist of localizing neurologic signs or signs of intracranial hypertension associated or unassociated with osseous lesions. The spinal cord manifestations resemble those of compression, simulating Pott's disease, spinal neoplasm, and primary meningoradicular lesions. Aside from the characteristic roentgen picture of the spinal lesions there is not any specific criterion. A combination of the anatomic and clinical observations are against the theory of the existence of a primary nervous form of malignant granulomatosis. Infiltration of the nervous parenchyma, when it exists, is always secondary to another focus of granulomatosis. Roentgen therapy, although not curative, is effective for retarding the evolution of the nervous accidents that occur in the course of malignant granulomatosis.

Presse Médicale, Paris

39: 1805-1828 (Dec. 9) 1931

*Loewenstein's Blood Culture Method in Diagnosis of Tuberculous Bacillemia. I. Nanu, D. Jonnesco and C. Stefanesco.—p. 1805.
Blocked Hypertension. A. Dumas.—p. 1807.
Skin Disturbances in Venous Diseases: Varicose Ulcer. G. Delater.—p. 1808.

Loewenstein's Method in Diagnosis of Tuberculous Bacillemia.—Nanu and his co-workers assert that Loewenstein's blood culture method for the tubercle bacillus may be added to and in some instances replace the usual methods of direct examination or the inoculation into guinea-pigs. Loewenstein's medium contains monopotassium phosphate, sodium citrate, magnesium sulphate, aspargin, glycerin, starch, yolk of egg, congo red or malachite green. From 10 to 30 cc. of blood is collected in 10 per cent solution of sodium citrate, centrifugated and decanted, and 10 cc. of a 5 per cent solution of acetic acid is added. This is allowed to stand five minutes, is centrifugated and decanted again; the clot is washed in distilled water until the hemoglobin is removed, is inoculated into three or four tubes, and is placed in a thermostat. The cultures become visible in two weeks and the growth is abundant in one month. There should also be a control by direct examination and inoculation into guinea-pigs. Loewenstein reported encouraging results in the cultures from pulmonary, cutaneous, renal, articular and ocular tuberculosis and acute rheumatism (the latter, twenty-one cases, all positive). The authors in this report assert that blood cultures, in twenty-one cases of suspected tuberculosis or rheumatism, proved positive in one case of tuberculous pleuroperitonitis and one case of acute polyarticular rheumatism with endocarditis and pericarditis. This method may also be used for examination of pathologic material, negative on direct examination. In that case it is advisable to wash the substance several times in 15 per cent sulphuric acid to eliminate associated micro-organisms. The authors obtained positive results within nine days from cultures of purulent pleural fluid, within ten days from purulent arthritis of the wrist, and within nine days from serohemorrhagic pericarditis. A blood culture in a case of inguinal adenopathy resembling tuberculosis was negative, however. The authors believe that culture for tubercle bacilli may be advisable when direct examination is negative.

39: 1845-1868 (Dec. 16) 1931

*Effect of Temperature Changes on Certain Phenomena of Clinical and Experimental Sensitization. Pasteur Vallery-Radot, G. Mauric and A. Hugo.—p. 1845.
*Ketogenic Diet in Epilepsy. P. Pagniez and A. Plichet.—p. 1847.
Indication for Surgical Intervention in Pott's Disease in Child. A. Richard and J. Calvet.—p. 1849.
Consideration of Various Mineral Waters Used in Treatment of Rheumatism. Mathieu-Pierre Weil.—p. 1853.
Postrachianesthetic Paralysis of Craniospinal Motor Nerves. C. Angelesco and S. Tzovaru.—p. 1855.

Effect of Temperature Changes on Phenomena of Clinical and Experimental Sensitization.—Pasteur Vallery-Radot and his co-workers assert that their observations (forty-five patients) substantiate their belief that temperature influences crises in asthma of the adult. In order to be effective, this temperature must attain a "threshold" value rarely lower than 38.5 C. (101.3 F.). Hypothermia or hyperthermia can prevent anaphylactic shock but the eventuality is not distinctly a matter of cause and effect. The authors conclude that in man hyperthermia prevents the clinical manifestations from being produced in certain conditions of hypersensitivity; in the animal these thermic modifications inhibit the manifestations of anaphylactic shock. In man, hyperthermia has no action on anaphylactic antibodies and hence there is no desensitization; the same is true in the animal. In the hypothermic or hyperthermic

animal a second injection usually succeeds in desensitizing. Pyretotherapy can be used in human anaphylaxis, not to remove the state of hypersensitivity, since the antibodies are responsible for that, but to make the conditions suitable for desensitization. Certain anaphylactic syndromes can be treated by an association of hyperthermia and desensitization.

Ketogenic Diet in Epilepsy.—Pagniez and Plichet assert that this diet should be adhered to as strictly as a regimen in diabetes. It consists in the suppression of carbohydrates, the replacement of the carbohydrates by fats and fatty substances, and the reduction of nitrogenous substances (meat). Before this diet is begun the patient is put on a reduced water diet for forty-eight hours. The second day, if the hunger is unbearable, the patient is given for his noon and evening meal a salad with plenty of olive oil. If the patient should get thin, the diet should nevertheless be continued. Constipation should be combated by magnesia, liquid petrolatum or castor oil. This regimen should be continued until there has been improvement or sedation. An exact record of the number of attacks should be kept. Acidosis, which is the result of this diet, is not the important factor. Recent workers believe that the action is due to a modification in the water metabolism. Whatever the exact interpretation may be, the authors recommend this regimen in view of the favorable results they have obtained.

Minerva Medica, Turin

2: 813-844 (Dec. 15) 1931

*Hyaline Degeneration of Spleen Associated with Chronic Lead Poisoning. A. Fontana.—p. 813.
Chloridemia in Patients with Benign and Malignant Tumors. M. Mairano and S. Teneff.—p. 820.
Subacute Leukemia: Cases. L. Ferrannini.—p. 824.

Hyaline Degeneration of Spleen in Chronic Lead Poisoning.—Fontana states that he never saw such marked hyaline degeneration of the spleen as he saw in a patient aged 53 who died as a result of a grave attack of uremia. The clinical diagnosis was chronic lead poisoning, hypertension due to malignant nephrosclerosis, cardiac hypertrophy, visceral stasis and left hydrothorax. He calls attention to this special condition associated with chronic lead poisoning because such a diffuse and grave hyalinosis should not be confused with ordinary arteriosclerosis of the vessels of the spleen; also owing to the complete absence of vascular calcification and the slight positive reaction obtained for the fats with the sudan dye and osmic acid. Something had certainly intervened (lead) that had caused a fibrous vascularitis, an endarteritis obliterans, a hyalinization prevailingly arteriocapillary in which, according to the conception of Pende, the syndrome, owing to the constitutional abiotrophic character of one or more organs, was developed, and was speeded up by the chronic intoxication.

Policlinico, Rome

39: 1-60 (Jan. 1) 1932. Medical Section

*Modifications of Acid-Base Equilibrium of Cerebrospinal Fluid in Some Pathologic Conditions. C. Manzini and P. Caramazza.—p. 1.
*Clinical and Anatomopathologic Contribution to Study of Extramedullary Tumors. F. Sabatucci.—p. 13.
*Malignant Lymphogranuloma. G. Jona and G. Dalla Torre.—p. 25.

Modifications of Acid-Base Equilibrium of Cerebrospinal Fluid.—In a study of the acid-base equilibrium of human cerebrospinal fluid, Manzini and Caramazza found a hydrogen ion concentration varying between p_H 7.41 and p_H 7.46 and an alkali reserve of from 43 to 50 volumes of carbon dioxide per cent. They think that the slight degree of alkalinity of normal cerebrospinal fluid compensates, through its relative autonomy and lack of corpuscles, for its lower content of bicarbonate. This possibly explains why it possesses a lower regulatory power than the blood serum although its p_H is practically equal to that of the blood. It is consequently necessary to estimate not only the hydrogen ion concentration but also the alkali reserve in studies of the acid-base equilibrium of cerebrospinal fluid. Variations from normal are found especially in inflammatory conditions of the meninges and depend on the gravity and form of the disease. In acute meningitis there is a true acidosis and in the tuberculous form one finds an uncompensated acidosis. Hydrogen ion concentration is lowered but seldom in the final stages of the disease. In meningism and serous meningitis the acid-base equilibrium remains unaltered; also in syphilitic conditions of the cerebrospinal axis if there are no concomitant meningeal lesions, in cerebral tumors and in hydrocephalus. In neoplasm of the hypophysis with syndrome of diabetes insipidus and in true uremia a well defined true acidosis is encountered. In the uremia of eclampsia there is no modification.

Extramedullary Tumors.—From the clinical and anatomopathologic point of view Sabatucci discusses a case of intradural extramedullary tumor that gave rise to peculiar manifestations: (1) protracted course of the disease over many years with but few clinical symptoms in the presence of a malignant tumor; (2) peculiar aggravation of the symptoms after an injection of iodized poppy-seed oil 40 per cent, which introduces a reasonable contraindication for cases in which opportunity for a surgical intervention exists; (3) favorable results of roentgen therapy when surgery was necessarily partial, and (4) anatomic rarity of the tumor, which was a fibroblastic sarcoma of angiomatous type.

Malignant Lymphogranuloma.—Jona and Dalla Torre state that malignant granuloma is an entity clearly defined by its clinical symptoms and histologic characteristics and that, although in many cases it cannot be diagnosed by direct observations, pathognomonic proof of its presence consists in the finding of Sternberg's tissue with its typical polynucleated cells. Malignant lymphogranuloma does not belong to the hyperplasias or to the neoplasias but is essentially an inflammatory process. This is evidenced by its clinical appearance with febrile periods and intermittent enlargement of the spleen and liver; its histologic changes which testify to its inflammatory type; the inflammatory character of the splenic tumor which is always present even when not of actual granulomatous nature. Malignant granuloma is a specific granulomatous process without any relation to tuberculosis: this is proved by uncomplicated cases, which evolve from beginning to end with their proper characteristics distinct from those occurring in tuberculosis; cases in which histologic and biologic examinations exclude tuberculosis and in which there is complete absence of any reaction to tuberculin. Frequent association with tuberculosis explains the contradictory reports on histology of and experimentation on granuloma. From the clinical point of view, classification of malignant granuloma is founded on its topographic distribution: peripheral form including cervical and cervico-axillary-inguinal, mediastinal form including splenomesenteric and gastro-intestinal, and cutaneous form. From the point of view of its effects it should be divided into a mechanical form with disturbances occasioned by its different sizes and a toxic form with special repercussive effect on the circulatory system and production of fatal anemia. The course of malignant lymphogranuloma may be acute, subacute or chronic with remissions, and leads to death in from one to five years. Its etiology is still obscure and its therapy unsuccessful.

Prensa Médica, Havana

22: 1-35 (Nov.) 1931

Prognosis of Chronic Pulmonary Tuberculosis. J. J. Bosco.—p. 4.
*Surgical Treatment of Pott's Disease by Costal Implant. A. Gutierrez and B. Labandibar.—p. 14.
Work of Cured Tuberculous Patients. L. Bard.—p. 27.

Surgical Treatment of Pott's Disease by Costal Implant.—Gutierrez and Labandibar recommend the use of a costal implant because it is available to the surgeon in a preliminary operation without moving the patient or leaving its preparation to an assistant, it offers the anatomic requirements of a good implant and represents adaptable material on account of its flexibility. Both steps of the operation can be done under local anesthesia. In the first step the skin and subcutaneous cellular tissues are infiltrated with a 0.5 per cent solution of procaine hydrochloride, the muscles with a 0.25 per cent solution and the intercostal nerve at the posterior end of the incision with a 0.5 per cent solution. The technic calls for an incision parallel to the rib and in the form of a supine C which allows of ample exposure of the desired rib segment and of eversion of the skin flap. The incision should be 4 cm. longer than the implant, which should be cut anteriorly to the costal angle of the seventh, eighth or ninth ribs and should not include any part of the cartilaginous portion. Two incisions of the periosteum are made, one on the upper and one on the lower border of the rib so as to conserve the anterior part

of the periosteum. In dissecting the implant, one should take care not to injure the parietal pleura. In the second step, anesthesia is obtained as in the first with a 0.5 per cent solution of procaine hydrochloride for the superficial tissues and a 0.25 per cent solution for the muscles. A curvilinear incision takes the flap away from the median line and avoids superimposition of the cutaneous with the deeper incision. The flap dissected and everted is isolated from the field of operation with gauze, the spinal processes are exposed, and the supraspinous and interspinous ligaments are sectioned in the median line. The spinal processes, two above and two below the lesion, are split vertically to the vicinity of the neural arch and fractured on one side, the angularity of the fracture is corrected by transverse pressure exerted on both sides, and the implant is inserted. Two distal sutures of heavy catgut through the supraspinous ligaments and the muscles serve to retain the implant, then a central suture followed by the remaining ones complete fixation. Patients are put on a hard bed for thirty or forty days before being allowed to walk. Plaster-of-paris, celluloid or ordinary reenforced corsets are used for from four to six months. Results have been uniformly satisfactory in the eleven patients treated by the authors, who advise against this operation in patients presenting tuberculous abscesses or fistulas, advanced visceral lesions of tuberculous nature or cachexia.

Revista de Medicina y Cirugia de la Habana, Havana

36: 875-940 (Dec. 31) 1931

Unilateral Renal Hematuria of Undetermined Origin. A. Diaz Albertini and A. G. Casariego.—p. 875.
Atypical Transverse Presentation: Thoracoventral Position. F. Loredo. —p. 879.
*New Procedure in Hysteropexy. J. A. Clark.—p. 886.
Laryngeal Cancer and Its Treatment. J. C. Gros.—p. 897.
Impressions of a Scholar: Part III. R. Machin.—p. 910.

New Procedure in Hysteropexy.—According to Clark, this new procedure is to be used only after the menopause. He uses the median incision below the umbilicus, splits the uterus anteroposteriorly down to the supracervical segment, and paints the mucosa with tincture of iodine. If the uterus happens to be congested, an assistant compresses the uterine arteries. Deep dissection of the mucosa follows, with resection at the lower limit of the incision and cauterization of the cervical canal. Three sutures of number 3 chromic catgut embracing the denuded uterine cavity close each half of the uterus; one suture is used circularly under the serosa to close the upper part of the cervical canal. An incision is made through each rectus abdominis muscle, the corresponding half of the uterus is pulled through, and the two halves are sutured together in the median line. Simple drainage with gauze is advisable.

Semana Médica, Buenos Aires

38: 1673-1740 (Dec. 3) 1931. Partial Index

Tuberculous Etiology of Erythema Nodosum: Experimental Confirmation. R. Cibils Aguirre.—p. 1673.
Retrobulbar Neuritis of Diabetic Origin. A. J. Manes and J. Malbrán. —p. 1676.
Surgical Treatment of Cranial Hypertension. M. Balado.—p. 1683.
Aniridia: Case. R. R. Gil and C. A. Locatelli Rivas.—p. 1691.
*Painful Nodular Growths of Ear. A. A. Fernández and J. L. E. Monserrat.—p. 1693.
Albee's Operation for Fractures of Vertebrae Without Any Lesion of the Nervous Substance. T. Gjoia.—p. 1700.
Trauma of Urethra: Emergency Surgery of Urinary Tract. J. Salleras. —p. 1705.

Painful Nodular Growths of Ear.—Fernández and Monserrat report a case of painful nodular growths in the ear of an adult. They regard the condition as an entity readily differentiated from epithelioma, cysts, gouty tophus, lupus erythematosus, several types of verrucae, keratosis senilis and the darwinian tubercle. The authors review the physiologic, topographic and histologic description of normal and pathologic glomi given by Masson in *Lyon Chirurgical* **21:**257 (June) 1924 (abstracted in THE JOURNAL, Aug. 23, 1924, p. 648). Humoral proliferated glomi developed into small hard tumors, which were designated by Masson as angioneuromyomas. They may develop, in either an isolated or a multiple form, in any of the tactile dermal areas, although the greater frequency of their development as well as the larger number of nodules in an area is in relation to the greater or lesser tactile function of the organ. The causation is unknown, although in some cases trauma has been considered as the etiologic factor. The diagnosis is made by the clinical and histologic characteristics. The most important clinical symptom is a radiating and severe pain in the nodules. A profuse bleeding is provoked when the nodule is detached from its seat. The histologic examination of the tumor proves that it is formed by nervous, muscular and epithelioid cells around a vessel which acts as the center for the development of the tumor. The authors believe that the name of either glomic tumors or Masson's angioneuromyoma is more proper to designate the condition than the several names of "painful nodules of the ear," "chondrodermatitis nodularis chronica helicis," "chronic development of nodules in the ear," or "pathologic growths in the cartilage of the pinna," which heretofore have been given to the condition.

Deutsches Archiv für klinische Medizin, Berlin

172: 219-334 (Dec. 21) 1931

*Influence of Potassium on Pruritus. J. Sauer.—p. 219.
*Investigations on Mode of Action of Potassium. J. Sauer.—p. 223.
Blood Sugar Curves in Siblings of Children with Diabetes Mellitus. H. Schestedt.—p. 228.
Behavior of Capillaries and of Cutaneous Glands During Diseases of Blood. E. Jürgensen.—p. 233.
Functions of Blood Platelets. R. Jurgens and W. Naumann.—p. 248.
*Gelatin Tolerance as Functional Test of Liver and Its Relation to Modern Liver Diagnosis. R. Mancke and K. Rohr.—p. 260.
Clinical Experiences on Hypertension and Albuminuria. O. Franke. —p. 281.
*Bactericidal Power of Blood During Tonsillitis. W. Vogel.—p. 298.
Exogenic Insulinuria in Persons with Diabetes Mellitus. A. Athanasiou and H. Reinwein.—p. 307.
Pyemia Paratyphosa (B) Cured by Blood Transfusion. E. Jacobson. —p. 317.
Colloid Osmotic Pressure in Anemias. E. Kylin.—p. 321.

Influence of Potassium on Pruritus.—Sauer points out that although the sodium and calcium ions have been thoroughly investigated, little is as yet known about the therapeutic and physiologic action of the potassium ion. How he came to study the therapeutic action of the potassium ion he illustrates in the clinical history of a woman who had severe pruritus and occasionally urticaria. Influence of warmth made the pruritus more intense and for this reason the patient suffered most severely at night. This factor was considered indicative of a hypersensitivity of the sympathetic nervous system and the itching was designated as "sympathetic pruritus." Since various therapeutic measures, such as diets free from sodium chloride and deficient in protein, or acid or alkaline diets, or the application of epinephrine or calcium chloride urea were ineffective, sodium bicarbonate was tried, but this likewise was ineffective. However, when potassium bicarbonate was given, a considerable improvement was noted. In order to determine whether the efficacy was due to the potassium ion, potassium acetate was administered, and on the following day the pruritus had almost completely disappeared. Because of this favorable result the author employed the potassium therapy also in other cases of sympathetic pruritus. Patients with chronic lichen urticatus, in whom ointments and irradiations had proved ineffective, were given three times daily a tablespoonful of liquor potassii acetici, 30 cc., and aqua destillata, sufficient to make 200 cc. After two days the pruritus had disappeared but the skin eruption was not changed, but after eight days a gradual improvement became noticeable; yet after two weeks it appeared as if there was no further progress in the curative process and the pruritus recurred temporarily. In order to reactivate the potassium action, calcium lactate was given for one day and as a result of this the pruritus and eczema showed an exacerbation, but when potassium acetate was given once more the healing progressed further. Of nine patients with lichen urticatus, only two were refractory to the potassium therapy and both of them were men. In women the treatment was much more effective. Several cases of chronic eczema of the hands likewise yielded to potassium therapy.

Investigations on Mode of Action of Potassium.—In this paper Sauer reports his studies on the mode of action of potassium. His conclusions are as follows: 1. Oral administration of large doses of potassium acetate effects an increase in the potassium content of the serum and of the cerebrospinal

fluid. 2. The calcium values in the serum soon follow this increase, for the ratio of calcium to potassium remains unchanged. 3. There is a displacement of the sodium from the serum. 4. The disappearance of the sympathetic pruritus following potassium therapy is not dependent on an increased potassium content of the serum.

Gelatin Tolerance as Functional Test of Liver.—Mancke and Rohr describe a tolerance test with gelatin and water which is suitable for clinical purposes. The alimentary hyperamino-aciduria indicates the severity of the disorder. By means of this test, disturbances in the intermediate protein metabolism can be determined. In order to differentiate the alimentary hyperamino-aciduria from that form caused by increased diuresis, a water tolerance test is made. The authors report about eighty-seven gelatin-water tolerance tests and about fifteen water tolerance tests on healthy persons and on those with disorders of the liver. The observations are compared with the results of the insulin-dextrose-water tests and of the galactose test. In normal persons the elimination of the amino nitrogen goes parallel with the quantity of urine. The concentration of the urine remains constant within comparatively narrow limits. Following a gelatin-water tolerance test there is a slight increase in the concentration, as an expression of the low alimentary hyperamino-aciduria of the normal person, but during the corresponding water tolerance test the concentration of the urine remains practically constant. The average concentration of the amino nitrogen in the urine of the normal person is, when determined according to Folin's method, about 25 mg. per hundred cubic centimeters, and after the gelatin-water tolerance test, it increases to 28 mg. In icterus catarrhalis gravis there is often a spontaneous hyperamino-aciduria, and besides this a marked alimentary hyperamino-aciduria can be produced by the gelatin-water tolerance test. In cases of minor severity, without an increase in the amino nitrogen of the urine, there develops, following the tolerance test, likewise a marked hyperamino-aciduria. Gradual differences can be demonstrated between these cases of icterus and acute atrophy of the liver. In the various forms of cirrhosis of the liver, without manifest stasis of the portal vein, there exists alimentary hyperamino-aciduria, which, corresponding to the developmental stage of cirrhosis, varies in severity. The authors show that an early diagnosis of cirrhosis of the liver is possible by a comparison of the results of the insulin-dextrose-water test with those of the gelatin-water test.

Bactericidal Power of Blood During Tonsillitis.—Vogel found that the bactericidal index of the blood is reduced in the course of every acute tonsillitis. It increases again, not synchronously with the improvement of the clinical manifestations, but only some time thereafter. This reduction of the bactericidal power of the blood is of no significance for the etiology of sequelae, for all, except one, of the cases on which the author made his observations ran their course without complications.

Wiener klinische Wochenschrift, Vienna

45: 1-32 (Jan. 1) 1932

Problems in Combat of Cancer. W. Denk.—p. 1.
*Irradiation in Cancers of Female Genitalia. W. Weibel.—p. 6.
Timely Remarks on Destiny of Cancer Hospitals. A. Fraenkel.—p. 8.
New Aims and Means in Metabolic Researches in Malignant Tumors. E. Freund.—p. 9.
Structure of Tumor Cell. B. Lipschütz.—p. 13.
*Irradiation of Carcinoma of Skin and Lips. L. Arzt and H. Fuhs.—p. 15.
Cancer of Rectum: Failure of Practitioner to Recognize It. H. Steindl.—p. 18.
Behavior of Blood Serum of Cancer Patients Following Operative Intervention. E. Ebner, F. Mandl and A. Pich.—p. 20.
Spontaneous Fracture of Odontoid Process of Epistropheus Without Injury of Spinal Cord. H. Hamperl and A. Maller.—p. 24.

Irradiation in Cancers of Female Genitalia.—In a tabular report, Weibel shows the frequency with which he employed either surgical and ray therapy combined or irradiation alone, in 350 cases of genital cancers during 1929 and 1930 and in 127 cases during 1931. In both periods nearly all the women with genital cancers were subjected to irradiation, but in 1931 the percentage that was given only ray treatment was larger than in the preceding period. When surgery was not resorted to, irradiation was always given as a combination of roentgen and radium treatment. In the first two years, roentgen therapy was the only form of irradiation used for postoperative treatment as well as for inoperable cases, because the available quantity of radon was limited. However, during 1931 radium was more extensively used. Preoperative irradiation with either roentgen rays or radium was never employed by the author, but he does not advise against it and thinks that in certain cases it could be tried. The postoperative roentgen irradiation he considers advisable for all cases. Combined radium and roentgen therapy is especially indicated for carcinoma of the cervix, whereas cancers of the corpus uteri are usually removed by surgical intervention. Vaginal carcinomas are frequently refractory to surgical treatment as well as to irradiation, but the author's own observations as well as those of others indicate that they yield best to radium irradiation. In carcinomas of the vulva, which likewise are difficult to influence, he employed surgery and postoperative irradiation. The ovarian carcinomas present a difficult problem, because they frequently are already inoperable when treatment is begun. In the majority of those which came under the author's observation, surgery and postoperative roentgen irradiation were resorted to. In regard to the technic of postoperative roentgen treatment, it is stated that the formerly customary treatment with large doses has been abandoned in favor of a prolonged treatment with smaller doses. The latter technic has also been adopted for inoperable cases.

Irradiation of Carcinoma of Skin and Lips.—Comparison of the results of a combination surgical and radium therapy with the results of exclusive radium treatment convinced Arzt and Fuhs that in carcinoma of the skin and of the lips these two methods are of about equal value. In consideration of this, it appears advisable to employ radium therapy exclusively, but the authors nevertheless employed in the majority of cases the combination of surgery and radium. The main reason for this procedure was the fact that exclusive radium treatment not only requires much more time but also necessitates the use of greater doses of rays, the latter being an important factor when the quantity of radium is limited. As to whether the surgical removal should be done with the knife or with the diathermic loop, the authors favor the latter. In analyzing their material according to the location of the carcinomas, they found that in carcinoma of the ear exclusive radium treatment fails, and consequently they consider the combined surgical and radium treatment absolutely necessary in such cases. In most other localizations the combination therapy gives about the same results as radium treatment alone. Only in carcinoma of the lip did the authors generally find exclusive radium treatment to be the method of choice.

Zeitschrift f. d. ges. Neurol. u. Psychiatrie, Berlin

137: 649-809 (Dec. 28) 1931

*Clinical, Roentgenologic and Anthropometric Studies on Person with Giant Growth Following Arrest of Growth. A. Mandl and F. Windholz.—p. 649.
Neurogenic Origin of Ankylosing Polyarthritis with Osteoporosis and of Endocrinous Disorders. L. Omorokow.—p. 709.
Experimental Production of Anosognosia of Hemiplegia. H. Hoff and O. Pötzl.—p. 722.
Tumors of Anterior Cornu of Lateral Ventricle. B. J. Scharapow and J. S. Weinberg.—p. 735.
Somatic and Biochemical Changes in Chronic Alcoholism. B. F. Goicher, E. O. Krasnowskaja and E. J. Tschernyschewa.—p. 745.
Critical Remarks About Freud's Subconsciousness. S. Fischer.—p. 775.
Nosologic Position of Paraphrenia. S. Fischer and O. Jaschke.—p. 791.
Nervous Connections of Sexual Apparatus. A. B. Josephowitsch.—p. 798.

Studies on Person with Giant Growth Following Arrest of Growth.—Mandl and Windholz report the case of a man with acromegalic giant growth, which set in after a marked inhibition of growth. The anamnesis revealed that at the age of 18 the patient's height was only 138 cm. (4 feet 6½ inches). The pathologically increased growth set in at the age of 21. At present, at the age of 31, the patient is 216 cm. (over 7 feet) tall. The present status is characterized by an enormous endosellar tumor, also by acromegaly and by hypogenitalism. As symptoms that differ from those mentioned in other reports the authors mention galactorrhea, the presence of female sex hormone in the urine and an abnormally small heart, with hypotony of the vascular system, while otherwise splanchnomegaly prevailed. Roentgenoscopy revealed a diffuse osteoporosis and a marked increase in the size of the skeleton. Many of the epiphyseal synarthroses were open. The

sella turcica was enormously enlarged. The sternal termination of the right clavicle showed an extensive defect. The pneumatization of the temporal bone and the development of the frontal sinuses were inhibited. Anthropometric measurements revealed an abnormal shortness of the trunk and asymmetry between right and left. The enlargement was especially marked on the upper arms, thighs, hands, feet and face. The authors also discuss the causes of the developmental inhibition in the early life of the patient, and cite factors that speak against a pituitary origin. They finally assume a causal relation to cretinism. The patient underwent an operation for removal of a hypophyseal tumor, and the microscopic examination of the surgical specimen revealed an immature adenoma. The authors express the opinion that in the reported case there existed no primary growth tendency but that the giant growth was due to an increased reactiveness of the organs sensibilized by growth inhibition for the pathologic growth stimulation exerted by the hypophyseal tumor.

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51: 493-546 (Dec.) 1931

Amaducci Reaction: Micro-Meinicke Reaction in Cerebrospinal Fluid. G. Marinescu, D. Grigorescu and G. Buttu.—p. 493.
Essential Incontinence of Urine: Pelvic Hypervagotonia. D. Paulian and I. Bistriceanu.—p. 496.
*Transscapular Extrapleural Thoracoplasty. M. Teodorescu.—p. 502.
Spino-Umbilical Reflex in Chronic Appendicitis. I. Stoia and M. Stanescu.—p. 506.
Intravenous Pyelography with Methiodal. S. Gavrilescu.—p. 508.

Transscapular Extrapleural Thoracoplasty.—Teodorescu asserts that extrapleural thoracoplasty as a surgical measure in the treatment of pulmonary tuberculosis merits the attention of clinicians and surgeons. The author uses the method of Sauerbruch, which he believes has advantages over other methods. The intervention is performed in the interscapulovertebral region with an incision preferably in the median line. The scapulovertebral muscles are cut parallel to the vertebral column, beginning at the lumbodorsal muscles. The costal transscapular approach makes the intervention more convenient so far as inundation, clearness and working space are concerned; and bleeding and pain are minimal. The author uses as local (regional) anesthesia a 1.5 per cent solution of procaine hydrochloride.

Sovetskaya Meditsina Vostochnoy Sibiri, Irkutsk

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Scrofulosis in Buriatic Children. I. N. Perevodchikov.—p. 25.
Study on Fatigue Among Factory Workers at Irkutsk. T. A. Lapionova and S. S. Serebrenikov.—p. 31.
Professional Noise. S. S. Serebrenikov.—p. 36.
Epidemiology of Scarlet Fever at Irkutsk for Last Thirty-Four Years. A. Popov.—p. 38.
Epidemiology of Scarlet Fever at Irkutsk. N. M. Kononov.—p. 52.
*Experimental Study of Case of Herpes Recurrens. N. N. Klodnitskiy and A. N. Danilova.—p. 71.
*Associated Factors in Tabetic Osteo-Arthropathy. N. N. Toporkov.—p. 83.
Clinical Aspect of Syphilis of Liver. L. I. Gefter.—p. 91.
Chronic Paragenital Serpiginous Soft Chancre: Case. L. I. Yudovich and E. P. Malkovskaya.—p. 104.

Experimental Study of Case of Herpes Recurrens.—Klodnitskiy and Danilova discuss the literature on the subject of viruses and their place in microbic dissociation. The material for their experimental study was obtained from one of the authors who in 1924 became infected through contact with two patients with epidemic encephalitis. The disease took an abdominal course and did not demonstrate herpetic symptoms until 1926. At first the vesicles appeared twice a year and later four times a year. Nicolle in Paris (1928) studied the virus and came to the conclusion that the strain was related to the rabies virus, but this was not conclusive. The authors used rabbits, guinea-pigs, mice and marmots for experimental animals. Injections from the herpetic vesicles were made subdurally, into the cornea, into the parathyroids, intraperitoneally, intramuscularly, and into the ear, trachea, brain, and salivary glands. Material for inoculation consisted of the pustular material itself and its cultures in broth. The authors believe that no matter in what part of the body the virus may be it affects the skin and may be found in the peripheral blood. Inoculation of the cornea with herpetic peripheral blood leads to 16 per cent loss of weight, and inoculation subdurally leads to 20 per cent loss in weight. Virus material injected into the cornea or the brain of rabbits caused encephalitis and death. The brain of the infected animal inoculated into another animal again caused encephalitis. The authors conclude that their strain of herpes virus had a strong neurotropic power. Infection through the cornea in guinea-pigs was characterized by encephalitis, loss of weight and abdominal symptoms. The cutaneous manifestation of herpes is a tendency toward attenuation and may be used for experimentation and therapy. After cutivaccination, the virus is present in the peripheral blood. Corneal or subdural inoculation causes loss of weight and lethal encephalitis that can be transmitted from animal to animal.

Associated Factors in Tabetic Osteo-Arthropathy.—Toporkov asserts that arthropathy in tabes is not frequent but is very serious. There is no conclusive therapy. The pathogenesis may be attributed to a dystrophic tendency and syphilis of the joints. Among the associated factors, the author stresses trauma, especially in tabes. In this relation, disturbance of the osteo-articular process leads eventually to complete invalidism. Most workers recommend antisyphilitic therapy aimed at the active syphilitic process, which tends toward trophic disturbance of tissue. Early roentgen diagnosis of silent arthropathic processes in tabes and energetic antisyphilitic therapy together with ordinary preventive measures are important in treatment and prophylaxis. That trauma is an important factor is proved by the fact that persons doing physical labor most frequently develop arthropathies. The author recommends examination of those syphilitic persons who are engaged in work that may lead to trauma of the joints. In a review of the literature he mentions four workers who observed 1,149 instances of arthropathy and found 39.9 per cent in the knee joints, 20.2 per cent in the pelvis, 12.0 per cent in the shoulders and 5.7 per cent in the feet. Most of the complications are in the lower extremities and are most frequently the result of trauma. The author discusses the case history of a patient with arthropathy of the spine due to a combination of tabes and compression of the spine.

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73: 831-901 (Nov.) 1931

*Rheumatic Iritis and Weather. E. Enroth.—p. 831.
*Sensibility of Cornea in Trachoma. Erna Zitting.—p. 837.
*Effect of Roentgen Irradiation on Ability of Tumors to Store Iodine and Bismuth. Gösta Jansson.—p. 857.
Experiences in Myelography. E. Ruin.—p. 875.
*Glaucomatous Hemorrhagic Iritis with Thrombopenic Purpura: Case. S. Werner and E. Adlercreutz.—p. 883.

Rheumatic Iritis and Weather.—Enroth thinks that there may be a certain relation between the onset of rheumatic iritis and the weather, especially that changes in the weather are of significance, because of unknown factors, as possibly disturbances in the heat regulation of the body or its electrical condition.

Sensibility of Cornea in Trachoma.—Of the seventy-three eyes examined, in cases with trachomatous pannus of from two weeks' to forty years' duration, the sensibility of the cornea was slightly decreased in eleven, moderately in thirty-five, greatly in twenty-two, and extremely in three; two were normal or nearly so. Zitting concludes that trachomatous processes reduce the sensibility of the entire cornea, particularly in the field of the pannus formation. The closer the pannus, the greater its extent, and the older the trachoma, the more marked is the reduction. Disturbances in sensibility are demonstrable after healing of the trachoma. The cases are tabulated.

Roentgen Irradiation and Ability of Tumors to Store Iodine.—Jansson's experiments, mainly on Jensen's rat sarcoma, show that more intensive irradiation, whether with a strong or a weak filter, decreases the ability of the tumor to store iodine, while its ability to store bismuth is increased by irradiation.

Glaucomatous Hemorrhagic Iritis with Thrombopenic Purpura.—The sudden hemorrhagic iritis with increased pressure in the case reported by Werner and Adlercreutz was resistant to energetic treatment continued for two months. At the end of that time a pronounced hemorrhagic diathesis with thrombopenia set in. Death occurred after two weeks. There was no hemorrhage from the mucous membrane of the mouth, and the thrombocyte count was 87,000. Acute leukemia, hemorrhagic aleukia and aplastic anemia were excluded. The relation between the hemorrhagic glaucomatous iritis and the thrombopenic purpura is not clear.